

Theme 2

Participation and engagement in web surveys of the general population: An overview of challenges and opportunities

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Introduction

The possibility of conducting surveys over the Internet has significant appeal, not least because of the advantages it offers in terms of cost-savings and the speed with which data can be collected from large samples. Yet a major barrier, which has prevented its widespread take-up in the context of large-scale general population surveys is the challenge of convincing people to answer questionnaires online. Nonresponse is a growing problem in survey research generally (e.g. Brick and Williams, 2013), but web surveys frequently suffer from lower response rates than can typically be achieved using other survey modes (Manfreda et al., 2008). This has led to concerns that moves to web-based data collection may reduce overall survey quality due to an increase in non-response bias. In this paper, I examine the main participation and engagement challenges for different types of survey design in which web might be incorporated, review some relevant studies, and identify opportunities for new research.

The constraints imposed by web-based data collection, as well as the opportunities it offers depend on the type of survey under consideration. Couper (2000) identified 8 types of web survey, grouping them according to whether they are based on probability or non-probability samples. As both approaches to sampling are used for surveying the general population, it should be noted that non-probability web surveys will not be discussed here. Readers interested in the limitations of non-probability based web surveys, as well as their usefulness for particular types of research, are referred to the report of a Task Force on opt-in panels set up by the American Association for Public Opinion Research (AAPOR) (Baker et al., 2010). In this paper, I restrict the discussion to three situations where web-based data collection could be incorporated into general population surveys based on random probability samples.

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These include situations where a web survey could be used:

1. to conduct an ad hoc or repeated cross-sectional survey (either from the first wave, or following a switch in modes)
2. to collect data in a given wave of an existing longitudinal study (including household panels and cohort studies)
3. to collect data on a regular (e.g. monthly) basis from members of a purpose-designed Internet panel survey, such as the Knowledge Networks or CentERdata LISS panels.

I am also primarily concerned with large-scale, complex, academic and government surveys of the population conducted in the United Kingdom, though many of the issues discussed are relevant to other national contexts. Some important considerations relating to sampling and coverage specific to the UK context should be borne in mind, however (discussed by Lynn (2013b) in synthesis paper 1). Notably, these concern the need to combine web with other modes of contact and data collection in each type of situation.

Participation and engagement challenges in different types of survey design

Because each of the survey situations described above impose different constraints on how web-based data collection can be incorporated, it is worth looking at each one separately to consider the unique participation and engagement challenges associated with each, and to review relevant related research.

Ad hoc or repeated cross-sectional surveys incorporating the web

To address non-coverage, web-based data collection would need to be combined with another mode or modes. Even among those parts of the population with access to the Internet, however, differential nonresponse rates may mean that using a combination of modes is an effective way to achieve better representation of the population. These requirements pose questions about the optimal way to mix modes and the implications of mixing modes for data quality. To date, research based on address-based samples (where contacts must be made by mail) suggests that sequential mixed mode designs that encourage as many sample members to complete the questionnaire online before alternative modes are offered in subsequent contacts tend to be most cost efficient (e.g. Smyth et al., 2010), and that response rates (and sample representativeness) can be improved with each subsequent follow-up (Messer and Dillman, 2011). However, these studies continue to find that overall, higher response rates can be obtained when a paper questionnaire is offered alongside the link to the web questionnaire (resulting in fewer completions online), and equivalent (Millar and Dillman, 2011) or higher (Messer and Dillman, 2011) response rates can be obtained when the paper questionnaire is sent alone without the web URL. Similar findings show that response rates from sequential mixed mode designs including web are generally lower than those obtained with face-to-face interviewing alone (Lynn, 2013a).

Two possible barriers to participation provide some explanation for the low online survey completion rates obtained in surveys based on samples of addresses. For one, survey requests are generally more effective when addressed to a named individual, which is not possible for addressed-based samples. For another, it seems that the additional effort of having to follow instructions to find a questionnaire online acts as a strong disincentive to participation compared with having a paper questionnaire in hand. This may explain why in the 2011 UK Census, where a web option was offered alongside the standard paper form, only around 15% of household questionnaires were completed online. It is noteworthy, however, that not all subgroups were equally affected. Among households where person 1 on the questionnaire was aged 26 to 35, the proportion responding online was over 25%, compared with less than 10% for those aged 65 and over (ONS, 2012). If similar variation in response rates by subgroup affected other surveys offering a web option, it could mean that survey estimates based on variables that are highly correlated with age would be biased in the data collected by web. An important goal for methodological research, therefore, is to investigate whether the inclusion of other modes alongside web helps to balance out differential nonresponse in each individual mode across the whole survey sample overall.

Despite the barriers to survey participation by web, the US examples suggest that mixed mode designs starting with an invitation to a web survey show considerable promise for ad hoc or repeated cross-sectional studies. Notably, they show that participation rates in web surveys (and representativity) can be significantly improved as a result of ‘multiple response-inducing techniques’ (Miller and Dillman, 2011), much as has been shown to be true in mail surveys (Dillman et al., 2009) and other modes (e.g. Peytchev et al., 2009). To date, however, there have been relatively few development studies focused on ad hoc web surveys of the general population conducted in the UK context. One exception includes a study currently being carried out in the UK in the context of the European Social Survey research on mixed mode data collection, which should shed light on how to optimise contact and selection strategies for a web survey, in which the first contact is by mail. Future research should be focused on building on this, and international studies, to establish the optimal balance of methods needed to maximise participation and sample representativeness, and minimise nonresponse bias in the UK context.

Longitudinal surveys incorporating the web

In longitudinal surveys, the challenges associated with getting people to respond online are somewhat different. Contact details are available for the target individual or household members, permitting personalised contacts. These may include email addresses, meaning invitations can be sent direct to sample members with a clickable link to the online survey. The principal participation and engagement challenges concern the impact of the mode switch on response rates for the wave in question, as well as on subsequent panel participation (Couper, 2012).

These issues are being investigated in research on the UK Household Longitudinal Study, Understanding Society, which as a household survey must address the additional complication of whether to allow a mix of modes within, as well as across, households. Evidence from the UKHLS Innovation Panel suggests that mixing modes – so far, face-to-face and telephone (IP2) and face-to-face and web (IP4) – does reduce response rates in the wave concerned compared with using face-to-face interviews only (although web

response rates can be significantly improved by offering larger incentives) (Lynn, 2011; 2012; 2013a). In the two waves following the mixed mode (face-to-face/telephone) wave (data are not yet available concerning the long-term impact of using web), response rates remained lower among those who received the mixed mode protocol at wave 2, but the cumulative response rates appear to have recovered somewhat as a result of using only face-to-face interviewing in subsequent waves (Lynn, 2012). However, these effects varied according to the nature of the mixed mode protocol tested, which suggests that the way in which modes are combined (e.g. whether panellists are offered a choice of mode or approached in different modes sequentially; whether all household members are subjected to the same protocol) is likely to have important consequences for participation and longer-term engagement.

Other UK studies that have either used, or experimented with using mixed mode designs involving web in the context of a longitudinal survey design include the Longitudinal Study of Young People in England (LSYPE), and the British Crime Survey (BCS). Similar research is already underway looking at how to successfully incorporate web-based data collection into the National Child Development Study (NCDS) and the Labour Force Survey (LFS). In the LSYPE, a seven wave panel study of young people (in year 9 at school when sampled), the first four waves were conducted by face-to-face interviewing, while the remaining three waves involved a mix of face-to-face, telephone and web interviews (Department for Education, 2011). Unlike in the UKHLS IP, wave to wave attrition rates remained fairly similar throughout the lifetime of the panel, and the impact of the switch to mixed modes on response rates was minimal (88% of wave 4 respondents took part in wave 5, compared to the 92% of wave 3 respondents who took part in wave 4, 87% of wave 5 respondents took part in wave 6, and 90% of wave 6 respondents who took part in wave 7 (*ibid.*). In the BCS, a mixed mode trial was conducted in the context of a re-contact study with respondents from the previous round of the survey. The design compared two sequential mixed modes designs among respondents who had supplied email addresses (online then postal, and postal then online), with postal only and telephone only re-contacts (Fong and Williams, 2011). Response rates overall varied little between the four contact strategies, but the online response rates contributed the least to the totals, and were considerably higher when online was offered as the first mode in the sequence (*ibid.*), thus corroborating the findings of the ad hoc US studies by Dillman and his colleagues that were reviewed earlier.

From these studies (with the exception LSYPE) there appears to be emerging evidence that participation rates in web mode (as in surveys conducted in other modes) are higher among older rather than younger adults, contrary to the often-held belief that web surveys may help to attract younger respondents who are hardest to reach in other modes. Indeed, in the US Health and Retirement Study (HRS), web surveys yielding high response rates (80% in 2011 – personal communication) have been successfully carried out for add-on studies between waves among subsets of older respondents (who report being regular internet users). These findings suggest that targeted mixed mode designs (in which the choice of mode is tailored according to known characteristics of panel members) may hold considerable promise for the future (Lynn, 2013a). Further research is needed, therefore, into who responds on the web, and how targeted strategies might best be implemented in existing longitudinal studies.

Internet panel surveys based on probability samples

Internet panel surveys based on probability samples differ from the other survey situations considered in as much as they are designed so that web-based questionnaires become the sole mode of data collection. However, in order to recruit participants to the panel, a recruitment survey must be carried out in an alternative mode. For example, an RDD telephone survey was used to recruit participants for the 2008-09 ANES Internet Panel Survey (see DeBell et al., 2010), and was the original recruitment method used by Knowledge Networks for its KnowledgePanel, though this is now maintained using a combination of contact modes with samples drawn from the US Postal Service's Delivery Sequence File to ensure full coverage of cell-phone only households. The Dutch LISS panel was recruited by a mix of telephone and face-to-face interviews (depending on the availability of numbers) based on a sample drawn from the nationwide address frame of Statistics Netherlands (Scherpenzeel, 2011a). The major participation and engagement challenge is to maximise the response rate (and representativity of the sample) at the recruitment stage, minimise drop out between the recruitment stage and the start of the regular online surveys, and to maintain the commitment of panellists to regularly participate so that attrition over the long term is low.

The US and Dutch experiences suggest that attrition over time may be less of a problem than nonresponse at the recruitment stage and the initial dropout after recruitment (although in practice, attrition rates over time may not be easy to assess – Couper, 2012; p.12). For example, the ANES panel (a separate stand-alone panel set up and maintained by Knowledge Networks on behalf of Stanford University and the University of Michigan), had a minimum¹ response rate at recruitment of 26% (n=2,371), while the response rate to the first self-completion survey was only 68% (n=1,599) (DeBell et al., 2010). In the LISS panel, 75% of the gross sample completed the recruitment survey, 63% said they were willing to participate, but only 48% of households eventually registered as a panel member (Scherpenzeel, 2011a). An analysis of the representativity of the LISS panel (van der Laan, 2009) found certain types of household to be underrepresented in the panel, including older aged, single-person households and households with first generation immigrants (differences in response rates were also observed as a function of having a registered telephone, having children in the household, neighbourhood status, and the number of households registered at the address). The same author compared the representativity of the LISS panel to the Dutch Labour Force Survey and found differences resulting from the use of mixed modes at the recruitment stage of the panel (van der Laan, 2009). These findings highlight the need for careful preparatory work in the set-up of online panel studies (see e.g. Scherpenzeel and Toepoel, 2012; Scherpenzeel, 2011b) to optimise recruitment methods, and carefully evaluate the impact of different approaches on overall survey quality.

Finding the optimal mix of response inducing techniques

Some of the barriers to participating in online surveys have already been discussed, including the problem of having to make contact with sample members in a mode other than web/email, and respondents' perceptions of the burden of going online to access the

¹ The estimated response rate based on assumptions about the rate of eligibility among telephone numbers with unknown eligibility (AAPOR Response Rate 3) was 42 per cent (DeBell et al., 2010).

questionnaire following instructions in an advance letter. Other important barriers to participation for some include lack of familiarity with computers, or lack of experience with using the Internet, and low levels of literacy – all of which are distinct from the problem of whether or not a household has Internet access, yet may affect ability and motivation to participate. Indeed, simply having access to the Internet may not be sufficient for being able to participate in an online survey – even if a person is motivated to do so (e.g. a person may use the Internet at work and not at home, but not be in a position to take part in a survey during work time). As with any survey conducted in any mode, a variety of variables are likely to impact on a person's decision to complete a web-based questionnaire, and the relative importance of these variables will vary from one person to the next, depending, in part, on how salient they are in the survey request (Groves, Singer and Corning, 2001). For this reason, the optimal strategy for ensuring a broad participation across different sample subgroups is to use a variety of methods aimed both at increasing response rates and reducing the risk of bias. Such methods might include the use of multiple and varied contact attempts to minimise noncontacts, refusal conversion methods to persuade uncooperative sample members, different ways of introducing the survey and presenting the survey request, and different types of incentive to attract different types of person. Research based on carefully designed experiments is needed to identify the optimal combination of strategies for each of the different types of web survey situation discussed.

As noted, the work of Dillman and his colleagues has made progress in identifying which strategies work best for web-plus-mail surveys of addressed-based general population samples in the US (Miller and Dillman, 2011; Messer and Dillman, 2011). As well as investigating the optimal sequencing of modes, these authors have also assessed the effect of sending prepaid incentives with the advance letter, which are generally expected to be more effective than other types of incentive (Groves and Couper, 1998), but have not so far been tested much in general population web surveys. Most studies of incentives in web surveys have experimented with giving prepaid electronic incentives or promised incentives, or participation in lotteries, finding positive, but small effects on response (see Göritz (2006) for meta-analyses of the available research). Messer and Dillman (2011) found that a prepaid, token cash incentive (of 5 US dollars) was highly effective at increasing response rates compared to offering no incentive, a finding that is consistent with the results of the few other studies available (Downes-Le Guin et al., 2002; Birnholtz et al., 2004). Nevertheless, more research is needed to establish the optimal sum and delivery method for web surveys of the general population in the UK context (given that individualised contacts are not possible for cross-sectional surveys), and to examine in more detail the effect of different types of incentive on different types of survey error, including nonresponse bias, and measurement error (Singer and Ye, 2013). For example, it is not known how different incentives impact on the composition of the sample (although Messer and Dillman (2011) report some relevant findings), or whether it would be beneficial to tailor incentives to attract underrepresented groups. Though this type of research can be challenging in surveys where no information is available about the characteristics of the non-responding sample, controlled experiments can provide insight into the types of people who respond to surveys under different incentive conditions and could prove invaluable in future efforts to tailor contact strategies.

The fact that incentives may have counteractive effects on participation in surveys by introducing bias into the composition of the responding sample or by affecting respondents' answers to certain questions highlights the possibility that particular combinations of response enhancement methods aimed at increasing response rates may occasionally backfire. For example, Göritz (2012) looked at the effect of sending reminders in the LISS panel (and other online panels) and found that although reminders do succeed in increasing response rates, they can sometimes have a negative impact on panel retention. Meanwhile, Roberts, Allum, and Sturgis (forthcoming) looked at the effect of follow-up efforts designed to increase response to the recruitment survey in the ANES Internet Panel, and found that respondents recruited with the greatest 'effort' ended up being less committed and more likely to drop out of the panel over time. Those that did go on to complete at least one monthly survey provided answers with more measurement error than those recruited more easily. These findings highlight the need to thoroughly investigate the best mix of methods for minimising nonresponse bias (not only for increasing response rates), alongside an evaluation of their impact on other types of survey error. It also again points to a need to explore the possibility of using more tailored strategies for different sample sub-groups.

Alternative ways of boosting respondent engagement

Although monetary incentives can be effective at increasing participation in web surveys and may help to reduce nonresponse bias by attracting respondents who might otherwise have not participated, the continuing rise in survey nonresponse and low response rates in web surveys particularly suggest the need to explore alternative ways to increase motivation to participate. The technological possibilities offered by the Internet, and the apparent growing motivation of the British public to be online, may provide some promise in this respect. Recent results from the Ipsos-MORI 2012 Tech Tracker show that 50% of British adults (aged 15 and over) have a smartphone, and 13% own a tablet. Handheld devices make getting online more convenient and instantaneous, and may help to reduce the perceived burden of following the URL to a web survey provided in an advance letter. Capitalising on the popularity of these technologies, and harnessing the capabilities of hand-held devices for conducting surveys, as well as other indirect forms of data collection, is likely to be critical to the future success of efforts to incorporate web-based data collection in general population surveys (Link, 2011).

As people become more accustomed to mobile technologies, expectations regarding the visual design and layout of web-based instruments is likely to evolve, meaning that survey organisations designing surveys for the web will need to work harder to create attractive applications that both enhance usability, and sustain respondents' interest long enough to complete one (or several) online surveys. This requirement offers researchers huge potential for exploring new ways of captivating the attention of would-be respondents. In the market research world, this work is already underway. Sleep and Puleston (2008) examined the reasons for drop-outs in online surveys, and identified respondent boredom as a key factor. They argue the need for a 'makeover' in how online surveys are designed, a 'paradigm shift of thinking' about the design and development of online questionnaires and question types to enhance their fluidity and interactivity (e.g. by using interactive Flash elements). These so-called 'gaming techniques' (aimed at making question formats more varied and engaging, and more visual) have been shown to have positive effects both on response quality, as well as on drop-out rates (and respondent satisfaction), and appear to

work well across cultures (Puleston and Rintoul, 2012). The overall aim of ‘gamifying’² surveys is to try to make them more lively and entertaining – like other online experiences – through the use of basic elements of game mechanics (‘a back story, a game-like aesthetic, rules for play and advancement, a challenge, and rewards’ – Downes-Le Guin et al., 2012; p.3-4). Yet not all research to date has confirmed the usefulness of such techniques. For example, studies looking at Java-based slider bars (Couper et al., 2006), and drag-and-drop ranking tasks (Thomas et al., 2010) compared with standard HTML interfaces found increased drop-out rates and interview lengths with the interactive designs. Downes-Le Guin and his colleagues (2012) also found no increased benefits of gamification for engagement and data quality, and argue the need to focus on aspects such as ‘survey length, topic salience, and cognitive burden’ (p.18).

Summary and conclusions

This paper has reviewed the challenges associated with participation and engagement in web surveys of the general population and highlighted opportunities for future research. The challenges discussed vary depending on the type of survey design in which web-based data collection might be incorporated, but common to all situations is the need for new research to explore the optimal mix of different methods for encouraging participation (including for example, mode sequencing, contact strategies, and incentives), in such a way that aims to enhance sample representativeness and reduce the risk of nonresponse bias. Particular attention should be paid to subgroups most at risk of underrepresentation, and how the combination of methods used impacts on other sources of survey error.

The somewhat mixed findings as to the benefits of gamification in web surveys highlight a need for new research in this domain – particularly with surveys designed for handheld devices. Social survey researchers undoubtedly have much to learn from the findings in market research, and new studies should be focused on exploring the optimal ways of improving respondent enjoyment of the survey-taking experience, as well as tackling the problem of engagement via more fundamental components of survey designs such as those identified above.

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² Defined by Zichermann and Cunningham (2011) as ‘the use of game thinking and game mechanics to engage users and solve problems’ (cited in Downes- Le Guin et al., 2012).

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