Web Surveys. A Brief Guide on Usability and Implementation Issues.*

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The first part of this paper introduces three general recommendations (be user-friendly, be trustworthy, be explicit) which should guide the process of conducting and implementing a web survey. The second part develops the recommendations into a list of guidelines grouped according to the different stages of conducting a web survey.

Keywords: Web surveys, online surveys, survey software, guidelines.

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1 Introduction

The main objective of the present paper is to formulate three essential recommendations which may guide through the process of implementing and conducting a web survey. The second part of the paper elaborates on these recommendations by listing practical guidelines for different stages in the process of the web survey. The bibliography serves as a starting point for readers who look for a broader understanding of web surveys and empirical data. This brief guide does not claim to be an exhaustive compilation of all noteworthy guidelines or recommendations. It is likely that resources covering web survey methodology such as the information portal WebSM (`http://websm.org`) will compile their own list of guidelines and recommendations. Still, situations may occur where exceptions are appropriate.

2 Three essential recommendations for web surveys: Be user-friendly, trustworthy and explicit

2.1 Be user-friendly

It is essential to use the advantages of online survey methodology while avoiding the introduction of new obstacles which would not be present in a comparable paper and pencil questionnaire. The implementation of a web survey should proceed in a way utilizing technical advances without imposing technical complexity on your participants. For example you should provide a hyperlink in an e-mail invitation, which leads directly to the questionnaire without an extra login procedure. Avoid the need to install new plug-ins. Give participants as much control over the survey process as with an equivalent paper and pencil questionnaire or more. User-friendliness is an important aspect to achieve valid data. Badly designed surveys suffer from misunderstandings in the questions and answer categories. Forced answer controls (where a response is necessary to proceed) make it more likely to produce invalid data.

2.2 Be trustworthy

Conform to established codes of conduct (e.g. AAPOR, 2002, ADM, 1999, for a list of codes see WebSM). Choose an appropriate implementation for your web survey so that participants are in full control of their answers during their participation. For example you should empower your participants so they can change their previous answers and provide comments. Disclose your identity and contact information and give information about the goals of the survey. Ensure data integrity and virtual anonymity as far as possible. As you build up trust, it becomes more likely for respondents to participate in your survey.

2.3 Be explicit

Being explicit makes your report and data quality more convincing. Thus, disclose your methodology. As the standards for online surveys are still developing the various possibilities of implementation make it hard to compare and evaluate their effects on participation behavior, data quality and all sorts of survey errors. Different implementation procedures (concerning incentives, invitation, reminder, contact modes etc.) are likely to have an effect on respondents' behavior. Nevertheless, online surveys are not necessarily inferior to other survey modes. In order to allow others the assessment of your survey provide information about your sample, the modes you used, the context in which the survey is conducted (topic and institution) and the implementation procedures.

Share screenshots of the first page (usually the invitation and explanatory page) and one example page of the survey. This is the easiest way to demonstrate the look and feel of your survey. Furthermore, several measures of response/non-response should be stated (for a discussion on survey quality and different types of survey errors see Couper, 2000). You should report: number of total invitations, visits to the first webpage, responses to the first question and number of total completions. For the number of completions and drop-outs to be comparable state how many answers (percentage) are necessary or what constitutes a data set to be counted as a completion. Provide the number of questions, pages and the number of necessary answers (data points) included in the survey. Report the average time and standard deviation it took till completion.

3 Guidelines for conducting web surveys

3.1 Writing a questionnaire for the web

1. *Search for already developed questionnaires and scales.* While writing a new questionnaire allows the highest flexibility in terms of wording, design and answer types, questions about the obtained data quality and thereby the quality of the questionnaire itself often remain unanswered. Three widely established and accepted quality criteria for questionnaires and tests are objectivity, reliability and validity. To assess and improve the quality much work has gone into the construction of scales and questionnaires. Therefore, start by searching for questionnaires or scales, which concern your information needs (cf. Glöckner-Rist, 2004 and Perlman, 2001).

2. *Use the same set of demographical questions for all of your surveys.* This will make your samples and results more comparable, thereby avoiding different categories for the same variable (e.g. age) in different surveys (cf. Hoffmeyer-Zlotnik & Wolf, 2003 and for Germany Ehling, Hoffmeyer-Zlotnik, Quitt, von der Heyde & Bosch, 2004).

3. *Make it as short as possible.* To maximize your response rates and the number of completions keep your survey short. A useful measure for survey length is the number of decisions/answers a respondent must make in order to complete a survey. The number of answers provides a better estimation for the length of a survey than

the number of questions or instructions. This is especially true if a lot of check marks are to be included under one question or if a grid layout includes dozens of radio buttons. For a survey to be below 8 minutes, 30 answers are sensible.

4. *Use as few answer types as possible and be consistent.* Each new answer type or new list of categories cause additional burden to the respondent. As more answer types are used the possibility for misunderstandings increases. It is easy to overlook a subtle change in labeling between two 5-point scales on different pages. For example imagine several question to be like "How often do you watch television?" with the answer categories being "at least once a day, at least once a week, at least once a month, less, never". The following question on the next page asks "How often do you check your e-mails?" Because checking e-mails might seem more likely than watching television we might want to adjust the scale to the new topic: "continuously, at least once a day, several times a week, less, never". The possibility that respondents are not always reading the complete instruction might be problematic, so some will answer according to the scaling of the previous questions. Thus, be consistent with your scales. Avoid switching between different scales, e.g. 5-point-scale and 7-point-scale. Furthermore, be consistent with your labels. Avoid using different types of labels for the answer categories, e.g. description at the top of the categories in one question and labels only at both ends of the scale in another question.

3.2 Getting it online

5. *Choose a software solution that meets your needs.* Software for web surveys helps to avoid the most common pitfalls in data integrity and saves many hours of work. Good software solutions make it easy to conform to the established standards in the field and deliver ready to use datasets (see websm.org for a software overview).

6. *Do not introduce problems in your online questionnaire which would not occur in a paper and pencil questionnaire.* Respondents are used to the possibility of going back to previous questions and change their answers. Allow respondents to pause the survey and to resume at a later time without losing all answers (save and continue). If there are different plausible ways to enter the data, support these ways. For example allow spaces between the digits of telephone numbers.

7. *Do not force any answer.* Use soft controls instead (validating responses and prompting for a valid answer without the necessity to revise the answer). For example if you ask for a telephone number and the response includes characters, you could prompt the respondent to revise his/her answer. Despite the invalid data, an implementation of soft control would allow to proceed with the next question without forcing a valid response. If you use hard validation controls, i.e. force valid responses, some respondents will make things up (e.g. fake e-mail addresses) or quit.

8. *Avoid drop-down-menus.* There is a tendency to select the top entries. Worse, drop-down-menus are easily overlooked. If you need to implement it, do not use default selections of answer categories. Make the first entry something like "-select here-". Otherwise you will not be able to tell the difference between a response of that category and an item non-response. Do not use drop-down menus or categories for answers which are very easy to answer, like for example "Year of birth?" In this case a text field would be appropriate. Only use drop-down menus and list boxes, if respondents know the answer without having to look at all entries.

9. *Randomize the sequence of your items.* If you have vertical answer categories without a necessary order this might be a good idea because respondents tend to choose the answers at the top. Do not randomize alphabetical lists, e.g. country names and make sure that a possible "don't know" or "other" remains at the end of the list.

10. *Avoid scrolling.* Display only so many questions on one page as fit within the window. Distribute the questions on several pages. This allows the save and continue feature to work, gives you data about response times per page and allows soft controls by server-sided scripts.

11. *Implement filters where appropriate.* Filters, jumps, skips, conditioning are means to adapt the questionnaire to the response behavior of each participant. They allow to skip non-appropriate questions depending on the previous answers given and thus reduce the length of a survey to the individual minimum.

12. *Use your corporate design.* Utilize header and background to design the survey in your corporate design.

13. *Run pretests with the web survey.* Check the matching of the question wording and their answer categories, the spelling and the flow of the questionnaire. Check for consistent layout, while you flip fast through your questionnaire. Avoid switching between left alignment and center alignment. Test the survey with people similar to the sample. Check the survey with different browsers and different settings (e.g. font sizes and window sizes). Identify questions where respondents might get stuck. Redesign before you go online.

3.3 Invitations

14. *When implementing list-based sampling by e-mail: Make your e-mail invitations suit their environment.* Provide an URL which leads directly to the survey. Test the URL in different e-mail clients. Store the participants' login or identification number in the URL given so the respondents do not need to fill in an extra number. Send plain text. Avoid attachments and html. Have a valid sender and only one visible receiver per e-mail. Use a meaningful subject line and adjust it with every new e-mail to the same respondent. Use personalized e-mails if possible instead

of "Dear Madam or Sir". Check the e-mails that were not delivered (bounces) for coincidences and systematic design errors.

15. *When implementing an intercept survey: Make your intercept survey suit its environment.* Use a systematic approach to invite visitors of a website, e.g. invite every nth visitor. The most common approaches use popups or banners for invitation. In the following cases, an invitation to website visitors should be avoided: (i) If they declined to participate, (ii) if they already participated, (iii) if the visitor was invited less than several minutes ago. The above three rules lead to the following: (iv) If you are not able to control your invitations for a given visitor (for example if the placement of cookies is not allowed), resist the urge to bother him/her with multiple and repeating invitations. Usually cookies are used to identify repeating visitors.

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