

### Web Surveys (Version 2.0)

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## **GESIS Survey Guidelines**

# **Web Surveys**

*Wolfgang Bandilla*

## Abstract

This contribution addresses fundamental methodological problems in web surveys – especially issues of coverage and sampling. The use of probability-based access panels is seen as a possible solution.

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## Web Surveys

Since the mid-1990s, the Internet has been used to conduct standardised surveys. Initially, these were often purely e-mail surveys in which the questionnaire was sent as a text document by e-mail. Nowadays, however, special software tools are employed that enable self-administered surveys to be carried out via web browsers. Hence, this is a technology that does not make any particular demands on the potential respondents – provided, of course, they have Internet access via suitably equipped terminal devices. At first glance, at least, Internet-based surveys have numerous advantages over other survey modes. These advantages include, for example, short field periods, the fact that responses are stored directly (and that the data must not, therefore, be separately recorded), and the possibility of using complex filtering and incorporating multimedia survey elements. The fact that interviewer costs and other expenses (e.g., postage) are not incurred is considered to be a particular advantage. Against this background, it is not surprising that by 2012 about one third of all surveys in Germany (mainly in market research) were implemented via the Internet (ADM, 2013).

In what follows, the methodological particularities and requirements of this survey mode are addressed. This brief overview does not deal with special types of web surveys (e.g., via smartphones, tablets, or TVs) made possible by the further technical development of special end devices.

### What methodological issues should be taken into account in the case of web surveys?

In contrast to face-to-face, telephone, and postal surveys, problems of coverage (i.e., inadequate match between the target population and the survey population) and sampling constitute a methodological challenge in web surveys.

Against this background, the objective of the planned survey project plays a decisive role in answering the question of whether the online mode is suitable in this particular case. If the focus is on testing experimental hypotheses, sampling issues are of less importance than if the objective of the research project is to estimate population parameters by means of a web survey. The advantages of online surveying come into play in psychological and social psychology experiments, in particular, because what is of central importance here is randomisation rather than the selection of respondents (Diekmann 2010, p. 523).

On the other hand, in scientific survey projects whose research objective is to use the results of the web survey to estimate unknown parameters of the corresponding target population, answers to the following questions should be found in the planning phase:

- a) In this particular research project, who can be surveyed via the Internet?
- b) How will the sample be drawn?

In addition, when deciding in favour of the online mode, one must take into account the particularities that arise when implementing a question programme in an online format.

### Who can be surveyed via the Internet?

It should be obvious that an Internet survey makes sense only if (almost) all the potential target persons have access to this medium. According to relevant studies (e.g., the ARD/ZDF Online Survey) this criterion is currently met by around three-quarters of all adults in Germany. The German General Social Survey (ALLBUS) conducted in 2012 came to the same conclusion: 74 percent private Internet use. However, this mean value is not a very meaningful statistic because the usage values of sub-populations may differ significantly, and the magnitude of the coverage error – that is, the mismatch between the target population and the survey population – may therefore be considerable.

This can be illustrated exemplarily by comparing the Internet usage of different age groups. While 97 percent of 18 to 29-year-olds use the Internet, only a minority (41 percent) of those aged 60 years or older do so. These figures alone clearly show that it would not make sense to conduct a web survey of older people on the subject of health, because the majority of this age group would not be able to participate. By using further variables (e.g., income and education) other sub-populations can be identified, most of whose members cannot (at least at present) be reached via the Internet (see also Schnell 2012, p. 290). By contrast, this problem does not arise in the case of young people, as their high usage values mean that they can, in principle, participate in web surveys. Hence, surveys of students, for example, have been conducted exclusively online for some time now, thereby benefiting from the advantages of this survey mode. One example is HISBUS, a panel survey conducted by the German Centre for Higher Education Research and Science Studies (DZHW).

These examples should suffice to show that researchers who are considering using the web survey mode as a means of estimating population parameters should check carefully at the project planning stage whether, and to what extent, potential target persons have access to the Internet. If the extent of access is inadequate, it is advisable to choose a survey mode in which this coverage problem does not exist (e.g., a postal or a face-to-face survey) as these modes do not have any comparable participation restrictions.

### How will the sample be drawn?

One question that is asked time and again relates to the drawing of samples for web surveys. In traditional survey modes (telephone, face-to-face, and paper-based methods) the prerequisites for drawing random samples from specifiable populations are met via telephone numbers, register lists, etc.

By contrast, the starting situation is very different in the case of web surveys. In Germany, there is no complete and up-to-date list of people who have Internet access – that is, people who, from a purely technical point of view, meet the prerequisite for participating in a web survey. Consequently, there is no complete list of e-mail addresses – comparable with telephone numbers in a telephone survey, for example – that could form the basis for sampling. In the case of telephone surveys, it is possible to work with artificial random numbers. A comparable approach cannot be taken in the case of e-mail addresses. Moreover, there are further problems, for example the fact that many people have several e-mail addresses, some of which serve to delete spam without having to read it. Complete lists of e-mail addresses are available only for specific individual organisations (e.g., enterprises, clubs/associations, universities). However, for data protection reasons alone, such lists are frequently not available to external users.

Coming back to the initial question about the existing possibilities of recruiting participants for a web survey, a typology of the different approaches can be found, for example, in Couper (2000). Of the seven types listed by Couper, two approaches are particularly worthy of note.

The first approach entails creating volunteer panels of Internet users who are, as a rule, recruited exclusively via the Internet. People who are interested in taking part register with relevant Internet portals and are then available to participate in web surveys (often in return for a small incentive). The advantage of these panels is that they can be used to realise complex experimental designs within very short field periods. However, a serious disadvantage is the fact that the underlying sampling approach does not enable any population parameters to be estimated. As Schnell (2012, p. 293) noted, this type of sample is therefore not suitable for serious population surveys, but rather serves, at best, to conduct psychological experiments on a limited scale.

Following the typology proposed by Couper (2000), the online mode can be meaningfully used in the case of population surveys only if one makes an arduous detour via traditional sampling. This involves conducting preliminary telephone, face-to-face, or paper-and-pencil interviews with a random sample of target persons to determine (a) whether they use the Internet and (b) if so, whether they would be willing to participate in regular web surveys. The disadvantage of this approach is that the coverage

problem persists because only those with Internet access can be given the opportunity to participate. In research practice, this problem is solved either by equipping non-users of the Internet with devices (e.g., a PC or a tablet) to enable them to take part in the web survey or by including them in the regular surveys via another survey mode (e.g., a postal survey). The first-mentioned approach is currently being implemented in large scientific projects such as LISS in the Netherlands and ELIPPS in France (see Das, 2012). The second-mentioned – mixed-mode – approach is the one employed in the case of the GESIS Panel, where a combination of web and postal surveys is used. These are special social science research projects in which, in addition to the substantive research questions, methodological research plays an important role.

In addition, both the LISS Panel and the GESIS Panel offer social scientists in the academic sector the possibility of realising their own population surveys on application. As a rule, this offering is free of charge. Further information on the application procedure in the case of the GESIS Panel can be found on the project website ([www.gesis-panel.org](http://www.gesis-panel.org)).

### What particularities should be taken into account in the case of web questionnaires?

Instruments designed for the online mode have numerous advantages over classical postal survey instruments. For example, as with all computer-assisted methods of data collection, the order in which the questions appear can be randomly varied in order to control for question order. In addition, filters/skips can be programmed and automatic consistency tests can be carried out – to mention but a few possibilities. Moreover, in contrast to computer-assisted telephone interviews (CATI), optical aids can be incorporated into the survey instrument. For example, images or films can be used to specify the survey topics, and progress bars can be employed to inform respondents of their current status.

Numerous experimental studies have been conducted on the effects of special design possibilities in web questionnaires. These studies cannot be addressed here. However, Couper (2008) offers a comprehensive overview in his book on web survey design, in which he outlines the advantages and disadvantages of specific design elements in online instruments. Web survey design is a research area in which new findings are continuously being published, for example in the *Public Opinion Quarterly*, the *Social Science Computer Review*, *Field Methods*, and *methods, data, analyses*. Hence, it is worthwhile taking a look at the current issues of these journals.

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## Online portal for web surveys

Comprehensive and up-to-date information on software, literature, conferences, and research projects can be found at:

[www.websm.org](http://www.websm.org)