Survey Methods, Online

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Definition and types

Even before the advent of the Internet, surveys were already a popular tool used by researchers to interview a sample of individuals to make statistical inferences about a population, yet it is frequently debated among communication science scholars whether or not they are a reliable tool for measurement (see entries on *survey methodology* and *generalizability*).

As the Internet became more prevalent, the advantages of email and paperless surveys were immediately recognized as an opportunity to conduct cost-efficient and timely research. The technology has been quickly adopted, and in less than two decades it has come to dominate the field of research using survey methodology.

Although there are several data collection modes in which surveys can be conducted, including snail mail, face-to-face, and over the telephone, in 2009, 85% of all online survey research conducted replaced traditional data collection means (Baker et al., 2010).

Online surveys

Online surveys represent one of the latest developments in survey methods over the past decades, and many types of research collection are now possible that were not conceivable before. This makes it a popular and affordable method for researchers. However, conducting surveys is fraught with methodological and logistical problems, which many academics in the 1990s believed the Internet would address. Since the advent of web-based research in 1996 (Couper & Miller, 2008) this method of survey distribution has provided distinct advantages and disadvantages that continue to fuel academic debate as the technology used for online surveys evolves.

When considering administrative concerns such as cost, materials, time, and staff needed to conduct more labor-intensive face-to-face or telephone surveys, online web surveys offer a number of benefits. During the 1990s, researchers quickly sought to adapt to the cost-effective method of reaching large audiences through online surveys, which reduced the resources needed for interviewers, mailing, postage, and processing, where it could take several days to do what a computerized online survey can do in seconds (Greenlaw & Brown-Welty, 2009).

However, unless online surveys are designed carefully, the quality of the data may be compromised through sampling issues such as respondents' self-selection, high nonresponse rates, and incomplete data provided by respondents in the form of do-not-know answers, or the exclusion of those without Internet access. Self-selection is a distinct disadvantage of conducting an online survey, which has been deemed to skew samples (Blom, Gathmann, & Krieger, 2015) and may not provide reliable and generalizable high-quality data. The error that occurs as a result of self-selection and nonprobability samples of many online surveys led the AAPOR executive council to recommend that "researchers should avoid nonprobability online samples when one of the researcher objectives is to accurately estimate population values" (Baker et al., 2010).

Sampling methods

All of these factors can make it difficult to generalize data gathered online to the whole population. Self-selection is a critical issue for online surveys, because it is necessary to collect a randomly selected sample to be able to make accurate inferences regarding the characteristics of a population, which means that every member of the population had an equal probability of being selected. When using an online survey based on a volunteer basis, the respondents are no longer randomly selected, and have themselves chosen to complete the survey, which can lead to bias error in the data if the respondents are not truly representative of the population. Therefore it is important to try to design web-based surveys that are representative, which is best done through probability-based recruitment. Research has shown that this can be done when recruiting a sample via traditional face-to-face selection from a probability sample, which is then followed up with a high-quality, online study. The results can be a worthwhile investment for higher quality data (Blom et al., 2016).

Key advantages

Online surveys can nevertheless provide access to unique populations, such as niche fan bases that mainly congregate online (Wright, 2005). The lack of a human interviewer during a computer-moderated survey can have distinct advantages, especially when researching undesirable social behavior. Respondents are more likely to be honest about their actions when they do not have to worry about impression management and how the interviewer may judge their responses (Chang & Krosnick, 2010).

Key considerations and disadvantages

It was hoped with the advent of web-based surveys that they would address the low response rate seen with mail and telephone surveys; however, this has not been the case (Couper & Miller, 2008). Response rates to web-survey requests have been confirmed to be consistently lower by 11% when compared to mail or telephone surveys. Without the

extra survey designs to increase the response rate, such as, for example, incentives, sample matching through preselected respondents who have already agreed to participate (Bethlehem, 2015), or face-to-face recruitment, online survey methods are no more or less effective in eliciting responses than many offline survey methods.

Online, it is also more likely that respondents will quit half-way through a survey if they lose motivation and do not have an interviewer to prompt them to continue. However, web-based surveys make it possible to complete the survey at one's convenience, and to take breaks if necessary. Even the online survey interface can influence the final results, when features such as progress bars, gendered avatars, and definitions of key terms can influence the way that respondents interact and think throughout the survey (Tourangeau, Conrad, & Couper, 2013).

Survey completion on mobile devices

The device a respondent uses to complete the survey can also influence their completion rate and the length of their typed answers. Those using mobile devices such as smartphones and tablets are less likely to complete the survey, and will provide shorter answers to open-ended response questions, which is influenced by a smaller keyboard size that requires more effort to input information than on a normal computer or laptop (Lambert & Miller, 2015; Peytchev & Hill, 2010). Aside from these technical considerations, which are improving with advances in mobile technology, the quality of the results from respondents are otherwise unaffected by the device they use to complete the survey. Though a respondent using a mobile device may have a longer survey completion time than someone else completing the same survey on a computer (De Bruijne & Wijnant, 2013).

Designing the optimal survey with technology

Research has found that web-based surveys may make respondents prone to choose the first appropriate answer instead of the optimal one, which leads to a higher rate of do-not-know answers or item nonresponse. The latest technology of customizable online software makes it possible to prompt respondents in a way very similar to an interviewer requesting politely that participants provide an answer. This can help provide more complete data (De Leeuw, Hox, & Boevé, 2016). In the future, these customizable designs will make it possible to mitigate disadvantageous panel conditioning, which is where respondents learn the structure of a survey. For example, learning to avoid answering questions in a manner that they know will prompt a longer follow-up question. Research has shown that isolating panel conditioning due to procedure versus content can help researchers design online surveys that alleviate these effects in online surveys (Struminskaya, 2015).

New techniques to mitigate the effect of nonprobability samples—which is one of the main critiques used against using survey methods—are being discussed in the current literature. For example, sample matching based on a preselected group of

people who have agreed to participate in surveys ahead of time, and then selecting a probability sample within this sample frame that matches the intended population to be researched, is an option that could help mitigate low response rates while still having a probability sample (Bethlehem, 2015). Generalizable data can also be derived from nonprobability samples when carefully crafted and stratified quota samples are used (Bethlehem, 2015; Weeks, Ardèvol-Abreu, & Gil de Zúñiga, 2015). In some instances, the AAPOR's latest report also recommends including participation and cooperation rates rather than the response rates, because the data is actually derived from a nonprobabilistic sample (AAPOR, 2011).

Probability-based online panels require extensive resources, making online surveys an investment that should be properly designed to make the most of the benefits they offer. Aside from being unable to access the email addresses of every member of the population, there are also legal considerations when sending out emails to massive lists that researchers must take into account (Baker et al., 2010). The tradeoff between accuracy and survey cost can make it difficult for researchers to afford the means to provide the most accurate and valid data when relying solely on a web-based survey panel.

Awareness of the limitations and weaknesses of online survey methods makes it still possible to get high-quality data, but requires a multimodal approach, such as face-to-face recruitment and mailed invitations, which can upturn the response rate for the final survey that is conducted online (Blom et al., 2016).

Whenever possible it is recommended to design a mixed-mode survey, which can help provide more complete information for researchers. Mixed-mode surveys can combine these methods in a variety of ways, and can increase the reliability of the data collected (Bosnjak, Das, & Lynn, 2016). A mixed-mode survey design may be more costly, but it will still have the benefits of customizability and convenience that make online surveys valuable tools for modern research (Ha et al., 2015).

Online surveys provide an excellent complement, while still keeping costs lower, when used effectively in conjunction with other modes to balance out coverage or representative errors that are inherent to each unique survey method. Scholars have established that more research needs to be conducted regarding the design of surveys on smartphones and tablets, as this can also influence responses, and the quality of the data collected (Lugtig & Toepoel, 2015).

Another key issue for sample selection when using an online survey is the automatic exclusion of any household without Internet access. Several studies, including the Panel of Dutch households in the Longitudinal Internet Studies for the Social Sciences (LISS) provided non-Internet households with the means to participate in the panel. Non-Internet households represented 10% of the overall sample. The implications of conducting online surveys in countries with lower Internet penetration will influence the demographic groups available to researchers (Eckman, 2016). For example, in these countries, it is often those who are more affluent who are able and willing to participate online, which is a limitation on the sample available to researchers (Leenheer & Scherpenzeel, 2013). Well-designed online surveys can be a cost-effective complement that makes it possible to reach a broader audience than was possible heretofore.

New developments

As Internet penetration increases, the under-coverage bias of non-Internet households becomes less likely, and researchers who cannot afford to ensure that non-Internet households are included in their panel, can examine if including these households will affect the results based on the analysis of the results of the LISS in the Netherlands. For example, the Netherlands has a high Internet penetration, which suggests that the inclusion of non-Internet households will not necessarily influence the final results. Other research has also shown that coverage bias decreases as Internet penetration increases over time, which can be affected by the rate of development in these countries (Couper, 2000; Mohorko, de Leeuw, & Hox, 2013).

Most recent work in the field recommends that further research is needed to confirm that online probability-based panels are worth the investment over nonprobability samples. As research in this field continues to develop, the design and implementation of online surveys will increase in sophistication and reliability, which will also improve the quality of the information collected online. Overall, online survey may become an even more attractive, cost-effective research method for communication researchers.

It is predicted that within the near future most survey research will be conducted online (Blom et al., 2015). Considering all aspects of online survey methodology is vital when designing a study to produce the highest quality data possible. Online survey methodology may provide an alternative data-gathering technique. The goal of the online survey remains the same, to advance the field of communication through greater accuracy and population parameter representation, while still remaining an affordable and manageable option. The future of online survey panels will evolve hand in hand with information technologies currently being developed, and further research into this methodology is required to ensure the best-quality data is available to researchers.

SEE ALSO: Common Method Bias; Methodological Rigor in Quantitative Research; Online Research Methods, Quantitative; Question Wording and Item Formulation; Sampling, Nonrandom; Sampling, Online; Sampling, Qualitative; Sampling, Random; Survey Methods, Traditional, Public Opinion Polling

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