



Data collection mode differences between national face-to-face and web surveys on gender inequality and discrimination questions



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ABSTRACT

The topic of gender inequality and discrimination has received constant attention from social scientists. Given that the majority of the research is based on survey data, a solid understanding of the impact of data collection mode on survey responses to this type of questions is important. This study utilizes the 2012 American National Election Studies to examine the response difference between face-to-face and Web surveys. The analyses reveal that mode effects exist both for substantial responses to the survey questions, but also item nonresponses. As expected, face-to-face surveys elicit more socially desirable responses than Web surveys. Also, the item nonresponse rate is higher in face-to-face surveys than Web surveys. In addition, this study demonstrates that the mode effect is not uniform across all respondents. Rather, the mode effect is larger for male respondents than female respondents. This is evidenced by the larger mode effect among male than female respondents in terms of both substantial responses and item nonresponses. Direction for future research is discussed.

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Introduction

Gender inequality and discrimination have always been an important line of research in many social science fields (Fenstermaker, West, & Zimmerman, 2002). Discrimination and inequality are frequently studied in both the public domain, such as employee segregation (Kmec, 2005), earning inequality (Huffman & Velasco, 1997), and access to authority (Gorman & Kmec, 2009; Stainback & Tomaskovic-Devey, 2009), as well as the private domain, such as inequality at home and personal life (Calasanti & Bailey, 1991; Kane & Sanchez, 1994; Shaw & others, 1985).

Survey data is one of the data sources for studies on gender inequality and discrimination. Therefore, a sound understanding of the measurement of survey questions on this topic is of great importance to not only survey researchers, but also social scientists in general. This study examines the data collection mode effects on attitudinal questions related to gender inequality issues. Specifically, this study focuses on comparing substance survey responses and item nonresponses between two national probability surveys, one done face-to-face and the other on the Web. These two modes differ on several dimensions (Couper, 2011), and these differences can influence the way respondents answer sensitive questions, like the ones examined in this study. As many flagship national surveys are moving toward Web data collection, a solid understanding of the mode effect on survey responses and data quality will provide important insights into survey design and social science research in general.

Literature review

Mode effect between face-to-face and web surveys

Couper (2011) describes a framework for comparing data collection mode, which can be used to explain potential differences between face-to-face and Web surveys in terms of responses to attitudinal questions. The first dimension differentiates face-to-face and Web surveys by the level of interviewer involvement: face-to-face surveys have the highest level of interviewer involvement while Web surveys have the least interviewer involvement. A related dimension of the framework for mode difference is the level of contact from the survey organization with the respondents. Specifically, in face-to-face surveys, interviewers make direct contact with the selected respondents, seek their participation, answer their questions and address their concerns, administer the survey, and record the answers. In contrast, Web surveys usually lack direct interpersonal interaction between the survey organization and the respondents. Instead, survey participation is often solicited by email or mail. These differences between face-to-face and Web surveys can result in two major consequences, namely differential response rate and data quality.

Studies on responses rates between these two modes show consistent findings, that is face-to-face surveys tend to achieve higher response rates than Web surveys (Christensen, Ekholm, Glümer, & Juel, 2014; Heerwegh & Loosveldt, 2008). Studies on data quality between these two modes reveal mixed results. Some studies report that face-to-face surveys produce superior data quality, as measured by lower item nonresponse rate and less non-differentiation (Goldenfeld & de Craen, 2013; Heerwegh, 2009; Heerwegh & Loosveldt, 2008). They

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attribute better data quality to interviewer involvement as they can provide guidance to the respondents and motivate them to finish the survey more carefully and thoroughly. However, there are also studies that report Web surveys provide better or no worse data quality than face-to-face surveys. For example, Liu and Wang found that face-to-face respondents provide more rounded answers, lower accuracy to political knowledge questions, and no difference on item nonresponse rates (Liu & Wang, 2014, 2015). The speculated reason is that face-to-face respondents are under higher time pressure, which poses a challenge to the respondent's cognitive capacity. It may have resulted in superficial comprehension and retrieval of information, and all of these are reflected in the survey responses, such as rounding.

A third distinction between face-to-face and Web surveys is the degree of privacy. The face-to-face survey has a lower level of privacy compared to the self-administered Web survey because of interviewer involvement, which can cause measurement error, often known as the interviewer effect (e.g., Liu & Stainback, 2013). The higher level of privacy of the Web survey is typically seen as valuable when collecting sensitive information, as a Web survey is able to elicit more self-disclosure than a face-to-face survey (Tourangeau, Conrad, & Couper, 2013).

The locus of control and channel of communication are other dimensions that differentiate face-to-face and Web surveys. For a face-to-face survey, interviewers administer the survey and hence they control the flow and speed of the survey. Web survey respondents, in comparison, have more autonomy over the survey taking process, as they can decide when and where to take the survey, at what pace, and through which device. This distinction can result in a mode difference between face-to-face and Web surveys. For example, Goldenbeld and de Craen (2013) found that face-to-face surveys elicit more extreme responses on ordinal rating scales than do Web surveys. The reason, as the authors suggested, is that the lack of control from the respondent's perspective in face-to-face surveys, combined with higher time pressure, have posed a challenge to respondent's cognitive capacity and resulted in superficial comprehension and information retrieval process during the interview. As a result, respondents are likely to simplify the cognitive process of interpreting ordinal scales by treating them in a dichotomous manner. In terms of the communication channel of these two modes, face-to-face surveys are primarily oral, or a combination of oral and visual if visual materials, such as show cards, are used during the interview. Web surveys use only visual presentation without an oral component. The different channels of communication are associated with different levels of cognitive burdens for responding to survey questions, which in turn can influence the responses provided in different modes.

Social desirability

The topic of gender inequality and discrimination is a sensitive one, and social desirability theory is the most relevant in predicting and explaining the mode difference between responses in face-to-face and Web surveys. Social desirability refers to the tendency of over-reporting socially acceptable attitudes and behaviors while under-reporting socially less acceptable ones (Callegaro, 2008). Apparently, respondents in face-to-face surveys are more susceptible to social desirability bias than Web surveys. Face-to-face respondents have a higher tendency to edit their undesirable answers and provide desirable ones in order to portray themselves in a more positive manner so as to avoid any potential tensions between them and the interviewers. In a self-administered Web survey, the absence of an interviewer increases the perceived level of privacy, which in turn can result in more self-disclosure of undesirable answers (Goldenbeld & de Craen, 2013; Heerwegh, 2009). For example, a higher proportion of abortion was reported in a self-administered mode than an interviewer-administered mode in the National Survey of Family Growth (Fu, Darroch, Henshaw, & Kolb, 1998). In another study, researchers found that the level of

reporting of the sensitive information and the response accuracy were higher in self-administered mode (web and interactive voice recognition) than telephone interview (Kreuter, Presser, & Tourangeau, 2008). Also, research has shown that not all questions are subject to social desirability in the same fashion (Christensen et al., 2014; Duffy, Smith, Terhanian, & Bremer, 2005). Rather, questions that seek sensitive information or questions that can potentially result in socially unacceptable responses are more susceptible to social desirability bias. Logically, these questions are more likely to show differential mode effect between face-to-face and Web surveys. In contrast, when responding to non-sensitive or intrusive questions, respondents tend to give candid and consistent responses, regardless of the survey mode. In addition, not everyone is susceptible to the mode effect that is rooted in social desirability bias. If one's true answer, whether attitude or behavior, is consistent with socially acceptable norms, then that person will provide an answer regardless of the survey mode he/she is interviewed in. By contrast, people with undesirable responses are more likely to suppress their true attitudes and give untruthful albeit more desirable answers in face-to-face than Web survey. For example, a study examining mode effect on attitudes toward homosexual rights found a significant mode effect only exists among heterosexual respondents where homosexual respondents provide similar responses to either face-to-face surveys or Web surveys (Liu & Wang, 2016).

The questions examined in this study are sensitive and are likely to be susceptible to social desirability bias. As shown in the next section, the questions focus on the general public opinion toward women's rights, particularly gender inequality and discrimination. Apparently, being supportive of gender equality and eliminating gender-based discrimination is more congruent with the social norms in current society and I expect face-to-face respondents to provide more such answers than Web respondents. Furthermore, I expect that the mode effect will be nonuniform: male respondents are more subject to the mode effect than female respondents. Male respondents are probably more likely to edit their responses based on the interview mode and provide more socially acceptable answers in either the less private or anonymous face-to-face survey than the self-administered Web survey. Female respondents are likely to be more consistent with their answers to questions on this topic, since this is centered around an issue that is more relevant to themselves. An earlier study examined mode effect on homosexual issues and found a significant effect among heterosexual response (Liu & Wang, 2016). For homosexual respondents, their answers were similar and not significant between face-to-face and web surveys. The authors argued that when the issue under study was more relevant to a subset of the population, that subset was likely to hold a well-formed opinion and less subject to the impact of mode. Consider this, I expect a larger mode effect on gender inequality and discrimination among male than female respondents.

Item nonresponse is another reflection of social desirability bias. When one possesses undesirable attitudes, not providing an answer to the survey question is another choice of hiding one's unacceptable opinion. Since questions in face-to-face surveys are more vulnerable to social desirability bias, I expect the item nonresponse rate in face-to-face surveys to be higher than Web surveys on questions regarding gender inequality and discrimination. Likewise, I expect that the mode effect on item nonresponse to be more salient among male than female respondents.

Data and measures

This study utilizes the 2012 American National Election Studies (ANES), a national survey on electoral participation, voting behavior, public opinion, as well as media exposure, cognitive style, and values and predispositions. The ANES contained both a pre-election study and a post-election study, and the same respondents were interviewed twice for these two studies. In 2012, for the first time, ANES conducted two surveys, one face-to-face and the other on the Web, using two

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