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Degree of cognitive interviewer involvement in questionnaire pretesting on trending survey modes

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ABSTRACT

Modern technology allows for surveying through different media (e.g. Internet, mobile phones, tablets), which may influence the quality of collected data with additional effects due to the survey mode and should be pretested with the purpose of avoiding effects that would deteriorate the quality of collected data. In the present study, we analysed the technological development of surveying tools by testing the applicability of cognitive interviews on several different survey modes. We focused on the importance of the cognitive interviewer and the effect of reducing their degree of involvement on the quality of the interview results. We carried out personal interviews, interviews using voice-over-Internet protocol, interviews using programs for instant messaging, and web-based interviews; these enabled us to analyse the quality of each survey mode and recognize their advantages and deficiencies. Through the comparison of these modes and their assigned technique, we showed that the role of a cognitive interviewer is important for the quality of interviews regardless of the degree of their involvement in the survey process. However, the requirement for the pretesting situation to resemble the actual final process leads to a necessity to develop new, enhanced approaches to cognitive interviewing on trending survey modes.

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1. Introduction

In the age of survey modes development, the prominent role of personal (face-to-face) interviewing is slowly decreasing in favour of alternative modes of data collection, which tend to be more affordable and less time consuming for researchers, while affording respondents more privacy and flexibility in completing the interview (Bethlehem & Biffignandi, 2012). Numerous modes developed from the basic three—face-to-face, telephone, and post (which later included computers and the Internet) (Groves et al. 2009). While diverse in the beginning, data collection modes recently evolved into combinations of methods that cannot be strictly assigned to only one of these groups. One of the consequences of this development is that these merged modes can suffer from mode effects for each mode they originate from, as well as their combined effect, which can lead to new types of measurement errors.

Measurement errors due to mode effects (and other factors) can often be detected with the use of pretesting methods. Pretesting allows for improvement of the questionnaire, reducing measurement errors, and, consequently, enhancing the quality of collected data by evaluating the questionnaire before its final use. Pretesting, conducted in several stages that usually start with cognitive laboratory qualitative methods and end with a quantitative pilot study, consists of numerous methods, including cognitive interviews, expert evaluations, focus groups, split-ballot experiments, exemplar generation, interviewer debriefings etc. (Akkerboom & Luiten 1996; Forsyth & Lessler, 2010; Groves et al. 2009). Some of these methods are performed exclusively by the researcher without the involvement of respondents (the exceptions being cognitive interviews, focus groups, and experiments) and thus cannot obtain the respondent's views on the issues with the questionnaire. This is especially problematic for survey modes in which the role of the interviewer is negligible. Having only a minor role in the data collection procedure diminishes the interviewer's ability to grasp all the potential issues with the questions from the respondents' point of view, whereas a front-row position allows respondents to expose the parts of the questionnaire that are, in fact, problematic.

The most recommended pretesting methods for self-administered questionnaires are, therefore, those that rely on the respondent's opinion: focus groups and cognitive interviews. As previously mentioned, mode effects increase the probability of measurement errors and therefore represent a threat to validity. Just as in regular surveying with mixed modes, a researcher should consider the

possible effect of different modes when pretesting a survey mode. More specifically, the most common way of performing cognitive interviews is in a personal face-to-face setting with a cognitive interviewer—regardless of the way the actual survey will be carried out. This can be especially problematic when the pretesting type and surveying modes differ (e.g., in the type of respondent—interviewer interaction, in the way the questions are conveyed, in the technology used, and in the degree of interviewer involvement). Insights gained from a cognitive interview that does not match the survey interview may expose issues that are not actually problematic in the original mode, while overlooking issues that would represent a problem in the actual survey mode. Moreover, a combination of two relatively diverse modes could lead to additional issues—consequences of mixing modes (Schober & Conrad, 2008, 18).

1.1. Research questions

It is clear that a questionnaire should be pretested in a mode similar to the final version of the survey. As Tourangeau, Rips, and Rasinski (2000) denoted, the way survey modes were administered can interact with respondent's cognitive processes, and consequently affect question design and cognitive interviewing practice. While there are many studies dealing with comparing cognitive interview outcomes across different respondent characteristics—such as different languages, cultures, age or education (e.g. de Leeuw, Borgers, and Smits 2004; Guillermo and Li, 2009; Holliday, 2003; Hunter, Terry, and Jurgenson 2010; Park, Sha, and Pan 2009; Vreeman, Nyandiko, Ayaya, Walumbe, & Inui, 2014) — only few studies focus on the possible effect of technology used in alternative survey modes. A research teams led by Behr, Kaczmirek, Bandilla, and Braun (2012, 2013, 2014a, 2014b) and Braun, Behr, and Kaczmirek (2013) has been testing the adaptability of probing questions for web surveys, showing how different versions of a probing question yield different responses. Apart from this research, there is no work being done to test other cognitive interviewing techniques for these types of surveys—testing other types of survey modes, and comparing results across different survey modes and cognitive interviewing techniques. With the assumption that some are better than others in their approach to detect potential sources of measurement errors, we performed an exploratory study comparing cognitive pretesting on five survey modes that differ in the degree of interviewer involvement and his/her interaction with the respondent. We already showed (Mohorko & Hlebec, 2014) that the role of the interviewer is of utmost importance for the quality of cognitive interviews. In contrast to regular survey interviews, which are standardized and require relatively automatized behaviour from the interviewer, cognitive interviews are most successful when they are based on active interaction between respondent and interviewer. A generic interaction (or even a complete lack thereof) may result in several missed opportunities to follow up on certain respondents' hints or non-verbal signs pointing out potential issues. Therefore, our main research goal was to establish how to apply the standard cognitive interviewing techniques to modes that do not rely on interviewer involvement as heavily as the most commonly tested face-to-face mode.

Three main research questions guided our study:

1) to what degree does the interviewer involvement affect the quality of the cognitive interview;
2) whether it is possible to adapt cognitive interviews to different/ trending survey modes whilst taking into account their specific traits; and
3) whether the outcomes from different survey modes are comparable.

Firstly, we tried to determine the influence of the degree of interviewer involvement on the quality of cognitive interviews and their outcomes, and how respondents reacted to different degrees of interaction with the interviewer. To answer the second research question, we tried to assess whether new technologies require new ways of pretesting, or whether the adaptation of customary techniques would also bring satisfactory results (and possibly even detect new issues that would have not become apparent and/or could have not been detected using only older modes). To answer these, we tested whether it is possible to apply the techniques to several different survey modes; we researched which technique detected the most issues with the questionnaire and whether the outcomes for different modes are comparable, as well as whether cognitive interview modes should match the actual survey modes.

In the paper, we first give a methodological overview of the study: we explain our choice for the survey modes that were tested and for the cognitive interviewing techniques that were used. We present the research design, describe the respondent and interviewer selection, and the data analysis. We follow up with the presentation of the results where we present the amount of issues each of the modes and techniques detected, describe mode effects that had taken place, and present the quality of different modes. Finally, we conclude the paper by linking the findings to the main research questions.

2. Methodology

To answer the three research questions, we undertook a small exploratory study with which we tried to establish the quality of several different types of cognitive interviewing techniques, and their adaptability to survey modes other than face-to-face interviewing. The survey modes using modern technology are still relatively new and there is a lack of literature and research implementing pretesting methods on them, hence the primarily exploratory nature of this study. Each of our 28 respondents answered a short questionnaire and was cognitively interviewed about the given responses either during or after the survey. The quality of cognitive interviews was measured by assessing the number of issues per specific question each interview detected[1] (while taking into account that some issues were a consequence of mode effects). The interviews differed according to several factors, mainly the employed technique, the mode in which they were carried out, and the degree of interviewer involvement. In the following paragraphs, we describe the research process in detail.

2.1. Survey mode selection

We based the choice of modes used in this study on the classifications of 27 survey modes[2] presented by Berzelak (2014), Groves et al. (2009), and Inview Veldwerk (2014). These classifications sort modes according to the main technology channel (paper, mail, web,

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