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How Customization Affects Survey Interaction

Antje Rosebrock

Malte Schierholz

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Antje Rosebrock[1] and Malte Schierholz[2]

[1]The Mannheim Centre for European Social Research (MZES) and Graduate School of Economic and Social Sciences (GESS), Mannheim (Germany)

[2]Institute for Employment Research (IAB), Nuremberg (Germany)

Introduction

- Customization of survey instruments (i.e., adapting the layout or the content of a questionnaire to the respondent) can prove beneficial for multiple reasons, such as reducing interview duration or improving data quality (Buskirk et al. 2018; Chun, Heeringa and Schouten 2018)
- We expect that more elaborated forms of customization, based on the use of new technologies, can impact the burden imposed on the interviewer and the respondent
- In the project "New Methods for Occupation Coding" (further information in Schierholz 2018a), a survey instrument was developed that uses supervised learning algorithms to predict candidate job categories from official job classification, e.g., the national German Classification of Occupations (*GCO*)
- These suggestions are presented to the respondent who, ideally, selects the most appropriate occupation. Therefore, the content of the question is changing depending on the verbatim input.

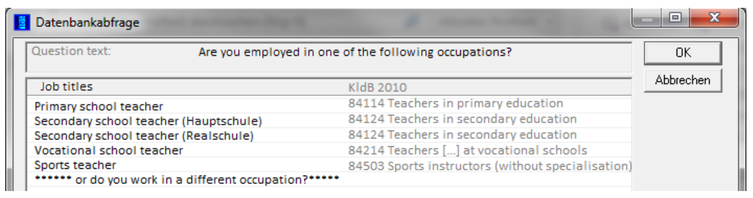

Figure 1: Screenshot from the interview with the response 'vice director and teacher': job titles in black font were suggested to the interviewer; the text in grey font was not shown during the interview and only added to illustrate underlying categories from the GCO 2010

Does customization impose additional burden on the interviewer in the survey interaction? Does this lead to interviewer errors?

→ Preliminary results based on data from Schierholz et al. (2018)

Does the burden perceived by respondents and interviewers as well as the usability of the instrument observed by interviewers differ depending on whether interviewers use conversational interviewing (CI) or standardized interviewing (SI)?

→ Proposal for an experimental study using a mixed methods approach

Previous Research

Background

- (Cognitive) burden on the interviewer can lead to misbehavior and is, therefore, a crucial factor that affects data quality (Japec 2007)
- Task difficulty can affect interviewer burden

→ Customization introduced by machine learning increases the task difficulty for the interviewer. Burden on the interviewer is expected to be high because the instrument changes in every interview. Therefore, the interviewer needs to constantly adapt to the changing contents of the instrument.

Data and methods

- Analysis of audio-recordings of 150 *standardized* telephone interviews in which a prior version of the tool for occupation coding was tested
- Behavior coding was used to investigate (a) how often and (b) why interviewers and respondents deviated from paradigmatic answer sequences

1. Development of a coding scheme by using full coding at the exchange level for a subsample of the selected interviews (n=50)
2. Application of this coding scheme on the full sample

Main Results

Interviewer satisficing as a sign for interviewer burden

- Behaviors include: Selecting a response without asking the respondent (4%), reading only one response option to the respondent (14%), skipping (seemingly) inappropriate response options (36%)
- *Possible effect on data quality:* Even if a response option matches the verbatim answer of the respondent, skipping response options can bias the results, because another (more concrete) job title might be more appropriate

Troubles when reading the response options to the respondent

- In 22.6% of the interviews, interviewers fail to make appropriate pauses between response options, in 12% of the interviews, interviewers read response options incorrectly, leading to a change of meaning
- This can be interpreted as a sign of interviewer burden because it shows that interviewers lack the familiarity with the tool

Other signs for increased burden: interviewer has to contact a supervisor (3%), problems caused by the computer as a third agent in the conversation (14.7%)

Planned Research

Background

Interviewing technique is likely to influence interviewers' as well as respondents' general perceptions of the survey situation as well as perceptions of task difficulty and burden.

	Conversational Interviewing	Standardized Interviewing
INT.	EITHER higher burden/lower usability *(more cognitive reources required)* OR lower burden/higher usability *(establishment of conversational grounding facilitates interaction)*	EITHER lower burden/higher usability *(less cognitive resources required)* OR higher burden/lower usability *(no establishment of conversational grounding, leads to longer, more burdensome interviews)*
RESP.	Lower burden *(interviewers behavior facilitates interaction)*	Higher burden *(interviewers behavior facilitates interaction)*

Research design and analysis strategy

A new version of the tool for occupation coding has been developed (Figure 2). To improve data quality, we do not use job titles as response options but occupation-specific task descriptions (e.g. not „school principal" but „management duties in schools of general education") which is likely to increase task difficulty for interviewers as argued before but also for the respondent (Schierholz et al 2018b).

- We propose a mixed-methods study that will be conducted in cooperation with the German *Institut für angewandte Sozialwissenschaft* (infas).
- The tool for occupation coding will be implemented in a telephone survey.
- Experimental study in which we randomly assign a subsample of 60 interviewers to two experimental groups that will conduct the interviews using SI or CI

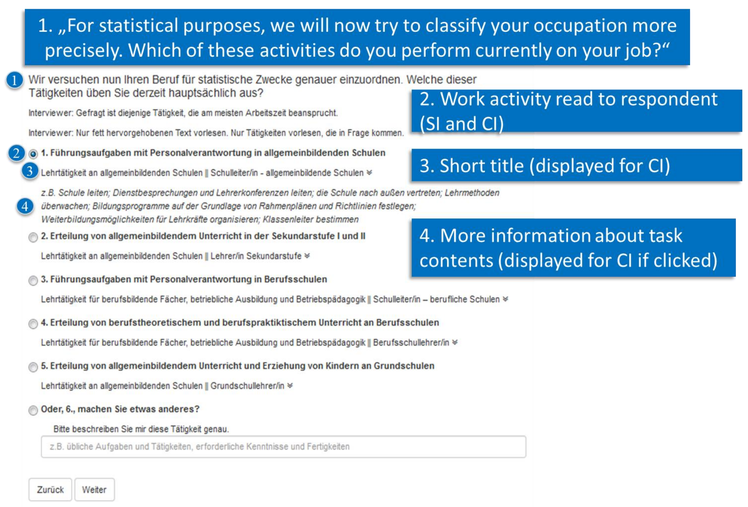

Figure 2: Screenshot from the interview (new version)

We will rely on different data sources to compare the two interviewing techniques:

1) Interviewers will **rate the usability of the tool** (1) before and (2) after the field stage to study whether CI- and SI-interviewers rate the usability of the tool differently before and after the field stage.
2) In the CATI-interviews, (a) interviewers and (b) respondents will **rate the difficulty** of the **(a) administration of tool** and **(b) the difficulty of choosing a response option**
3) **Audio-recordings** of the interaction that will be analysed using behavior coding to detect indications of problems by interviewers and respondents.
4) Results from **focus groups** that will complement the quantitative data collected in the survey and will inform an extended interviewer survey after the field stage

Experimental group 1: CI-Interviewers (n=30)

- Collaboration with respondent
- Skip unlikely response options
- Paraphrasing/suggestive probing
- Definitions/examples can be read verbatim or paraphrased

Experimental group 2: SI-Interviewers (n=30)

- Neutral behavior
- All response options read verbatim
- No definitions/examples displayed

Short interviewer survey: Interviewer rating of overall usability (before field stage)

CATI-Survey (n=1500)

- Sample drawn from general German population
- Tool for occupation coding implemented in sociodemographic questionnaire module
- *Data collected for analysis:*
  - Audio-recordings
  - Questions on perceived burden for the respondent and the interviewer

Focus Groups/ Debriefings

- Separate focus groups with selected interviewers from both groups (n=5 per group) after conducting a minimum of ten interviews
- Semi-standardized interviews with a focus on perceptions of cognitive burden and specific problems that occurred in the interaction with the respondents, both regarding the interviewing condition and the instrument in particular.

Extended interviewer survey:

- Interviewer rating of overall usability (after field stage)
- Questions developed based on debriefings to incorporate ideas and experiences of the interviewers

Literature cited

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UNIVERSITY OF MANNHEIM

Institut für Arbeitsmarkt- und Berufsforschung
Die Forschungseinrichtung der Bundesagentur für Arbeit
IAB

mzes mannheimer zentrum für europäische sozialforschung