Open-Ended Survey Questions:
A comparison of information content in text and audio response formats

Keywords: open-ended survey questions, speech-to-text, topic models, word embeddings, response entropy

Extended Abstract

Open-ended survey questions ("OEQs") provide an important and rich source of data in addition to closed-ended questions ("CEQs") and have been established as an important methodological tool for measuring attitudes and opinions in surveys (Kunz, Quoß, and Gummer 2021; Smyth et al. 2009; Tourangeau and Smith 1996). The advantages of OEQs become particularly evident when researchers are interested in collecting as unbiased and multifaceted aspects of survey responses as possible. Both of these properties can be attributed to OEQs because they lack predefined closed response categories (Iyengar 1996).

However, despite their usefulness, OEQs pose challenges to respondents, for example an increased response burden and associated phenomena such as a decrease in response length and response quality. Consequently, the question arises as to how survey practitioners should design OEQs so that respective answers contain a high degree of information.

The present study compares audio- and text-based response formats for OEQs. A large corpus of survey research has examined the implications of using OEQs keeping the focus on requests for written answers. Here, previous research predominantly varied the presentation (e.g., Kunz, Quoß, Gummer 2021) or the placement of OEQs (e.g., Schmidt, Gummer, Roßmann, 2020). Only few studies to date have examined the effect of varying the response format (i.e., audio versus text) on responses to OEQs (e.g., Revilla et al. 2020, Gavras et al. 2022, Chen et al. 2022).

We use a U.S. sample (N=1,500) and questions adapted from popular social survey programs. By experimentally varying the response format (text versus audio) we examine which format produces answers with a higher amount of information.

The information content is measured in several ways in our study. First, we consider the response length and thus follow previous research on effects of response format on response quality (Gavras et al. 2022, Chen et al. 2022, Revilla and Couper 2021). In a next step, however, we argue that longer answers do not necessarily indicate higher information content (cf. Barth and Schmitz 2021, Schmidt, Gummer and Roßmann 2020). In particular, we investigate to what extent the content and complexity of answers irrespective of the length of the answer can provide information about the information content. In this second step, information content is measured via the number of topics derived from topic models, an assessment of document similarity using cosine similarity as well as response entropy.

Preliminary results show that oral responses are on average longer and this finding is consistent for all of the 10 different OEQs used in our study (cf. Figure 1). Results with regards to information content however are mixed. At least for the topic model analysis a slightly higher number of topics is found in the text condition. Reasons for this could be complex and their investigation is another objective of the study. Potential reasonings include a different way of structuring answers in written compared to spoken answers (cf. Gavras et al. 2022) as well as systematic differences in item response rates. Either way, possibly open-ended audio responses are not the supposed secret weapon when we want to learn more about individuals' motives and preferences in survey attitudes.

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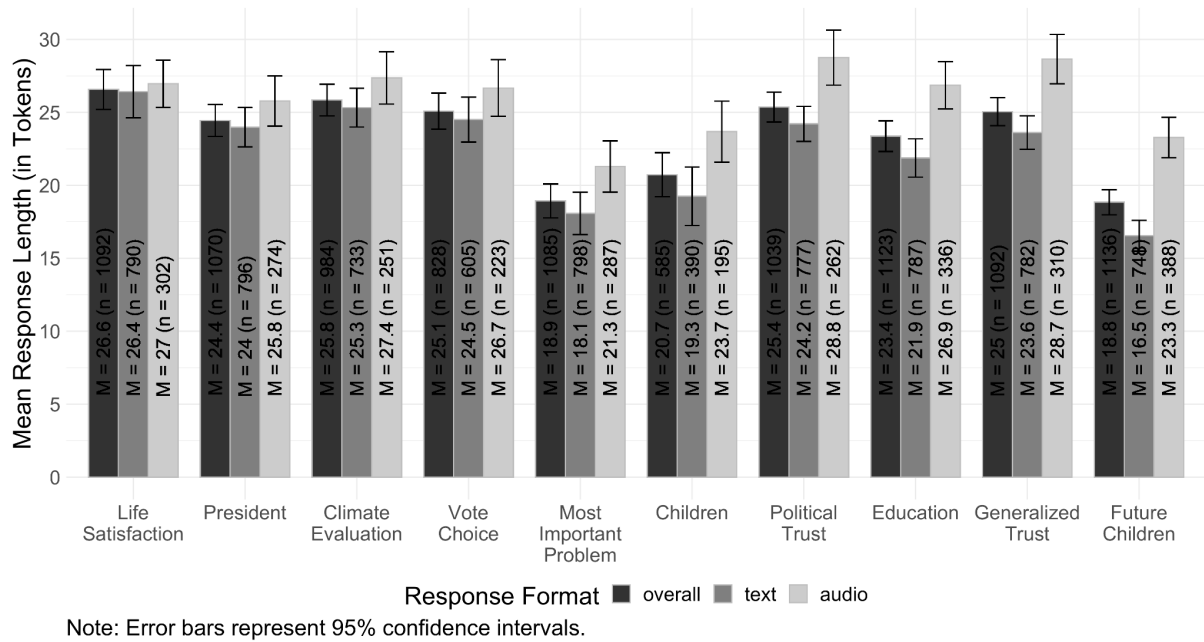
Figure 1. Response Length by Answer Format for 10 OEQs.