Open Question Formats: Comparing the Suitability of Requests for Text and Voice Answers in Smartphone Surveys

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Introduction and Background I

- Web surveys are a prevailing data collection method
  - *Cost-effectiveness, timeliness, and technological amenability*
- Rapid increase of mobile devices → especially smartphones
  - *For instance, smartphone rate in German Internet Panel: 4% (Sep 12) - 10% (May 16) - 35% (Sep 20)*
- Smartphones facilitate new communication channels
  - *Making use of built-in sensors, such as microphones*
  - *Change from visual (or text) channel to voice channel*
  - *Open questions with voice instead of text requests*

Introduction and Background II

- Open questions potentially gather in-depth information
  - *No rigid scales with predefined answer categories*
- Most open questions use text requests
  - *Entering answers via (virtual on-screen) keyboards is burdensome*
  - *Requires high level of literacy*
  - *Effects of answer field size*
- Administering open questions with voice requests
  - *Recording answers with few burden by clicking a recording button*
  - *Triggering unfiltered open narrations*

Introduction and Background III

- Higher break-off for voice answers (Gavras & Höhne, 2020; Gavras et al., under review)
- Higher item-nonresponse for voice answers (Gavras & Höhne, 2020; Gavras et al., under review; Revilla & Couper, 2019; Revilla et al., 2020)
- Longer voice answers in terms of words/characters (Gavras, 2019; Gavras et al., under review; Revilla et al., 2020)
- Shorter voice answers in terms of response times (Revilla et al., 2020)
- No differences in substantive answers (Gavras, 2019; Revilla, et al. 2020)
- Higher criterion validity for voice answers (Gavras & Höhne, 2020)

Research Questions (RQs)

Do open questions on political attitudes with text and voice requests differ regarding …

… break-off? (RQ1)

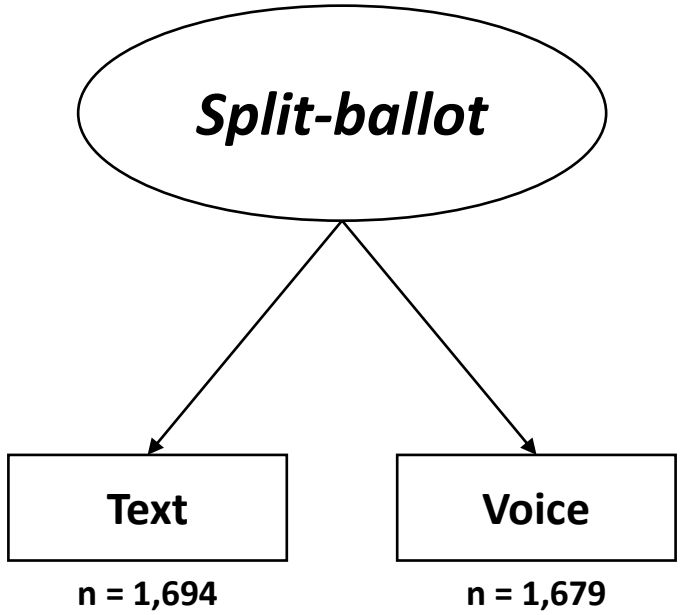
… item-nonresponse? (RQ2)

… the number of words? (RQ3)

… response times? (RQ4)

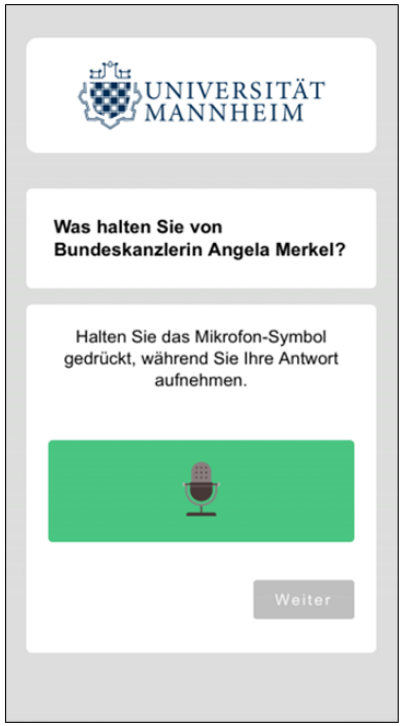
… respondents' evaluations on survey interest and difficulty? (RQ5)

Methods: Study Design



- We employed 6 open questions:
  - *1 on the most important political issue in Germany*
  - *1 on attitudes towards the German Chancellor*
  - *4 on attitudes towards German political parties (CDU/CSU, SPD, Greens, and AfD)*
- Each question presented individually
- Text and voice conditions preceded by short instructions
- 2 questions on survey interest and difficulty
- Optimized survey layout

Methods: Text and Voice Requests



- Example: Open question on the German chancellor
- Text condition on the left
  - *'Next' button is not displayed because of space limitations.*
  - *No character limitation*
- Voice on the right
  - *"SurveyVoice (SVoice)" tool* (Höhne et al., forthcoming)
  - *No recording time limitation*

Methods: Data and Sample Characteristics

Experiment conducted in the Omninet Panel (Forsa) in Germany in December 2019 and January 2020

Cross-quotas:	*Gender, age, education, and region (2x3x3x2)*
Final sample size:	*N = 2,402*
Gender:	*49% female*
Age (in years):	*Mean = 43*
Education:	*23% lower education secondary school*
	33% intermediate secondary school
	44% at least college preparatory secondary school
Region:	*85% West Germany*

Chi-square tests reveal no differences between the conditions (text and voice) regarding gender, age, education, and region.

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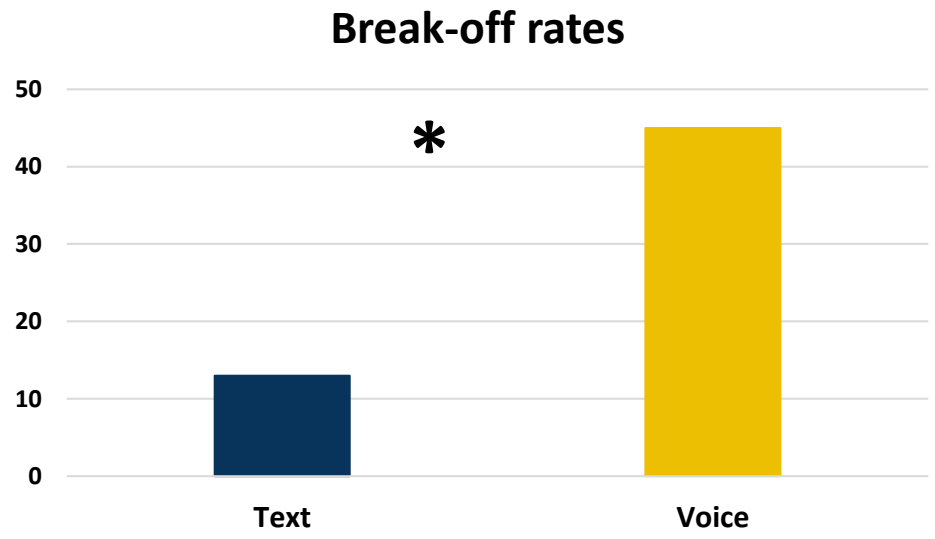
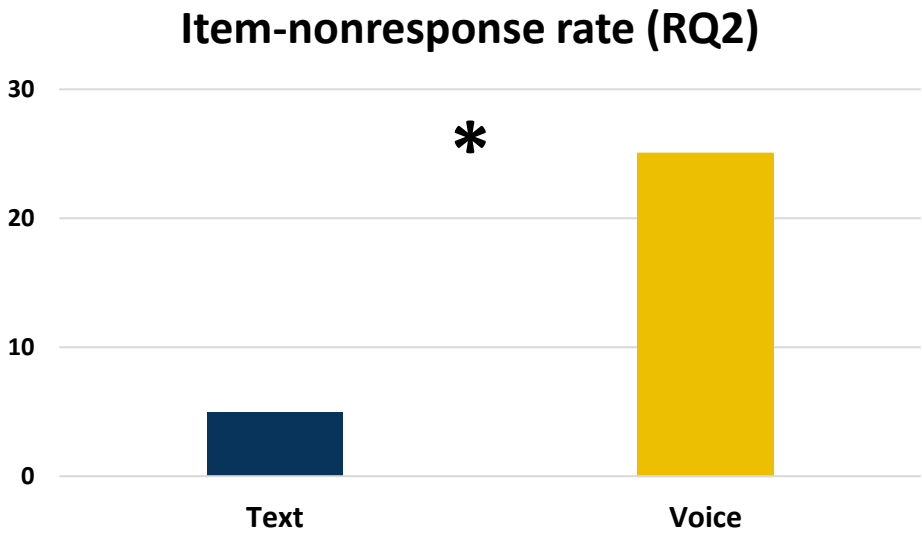
Methods: Analytical Strategy

- RQ1: Break-off rates are compared using Z-test
  - *Across the entire survey*
- RQ2: Item-nonresponse rates are compared using Z-test
  - *Aggregated across all 6 open questions*
- RQ3: Number of words are compared using t-test
  - *Voice answers were initially transcribed by Google's "Speech-to-Text API"*
  - *Aggregated across all 6 open questions*
- RQ4: Response times are compared using U-test
  - *"Embedded Client Side Paradata"* (Schlosser & Höhne, 2020)
  - *Aggregated across all 6 open questions*
- RQ5: Respondents' evaluations are compared using t-test
  - *Across the entire survey*

Results: Research Questions 1 and 2

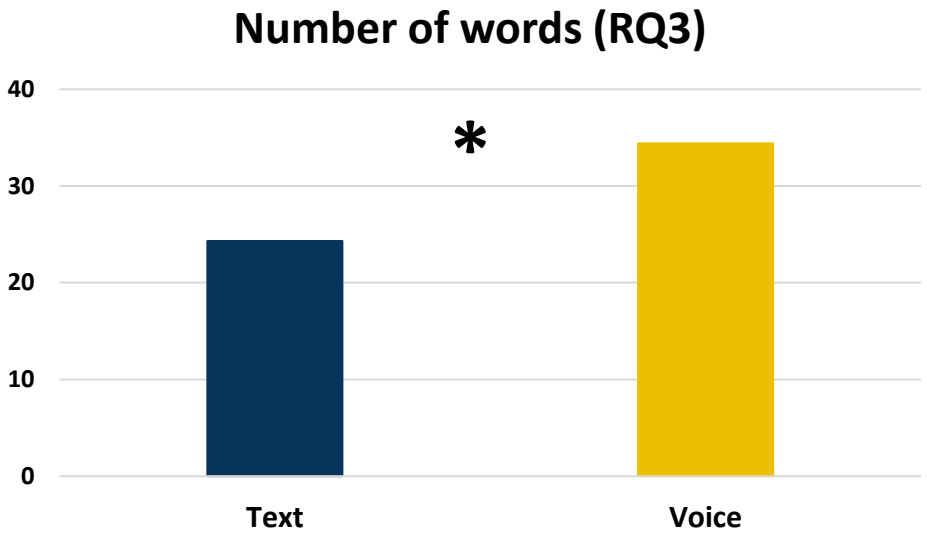


p < 0.05. Percentages. Z-test.

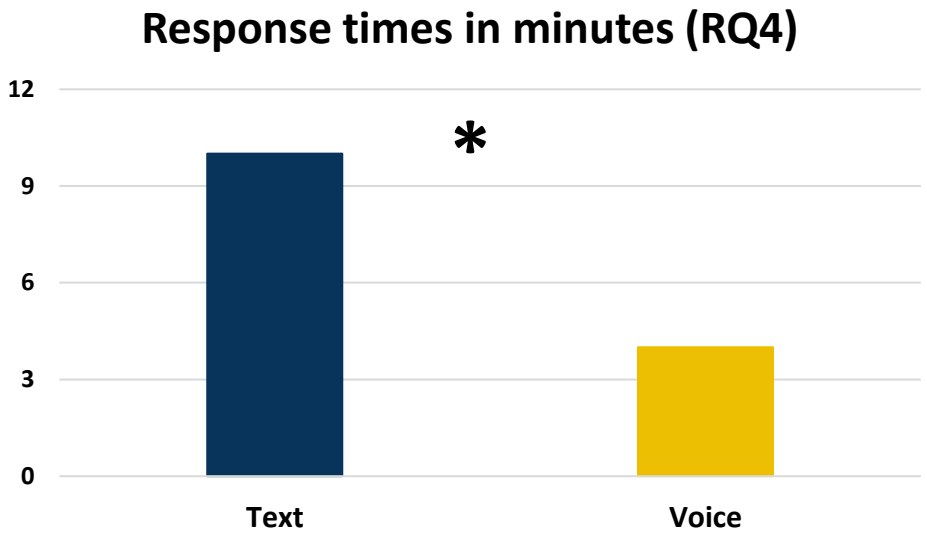


p < 0.05. Percentages. Z-test.

Results: Research Questions 3 and 4

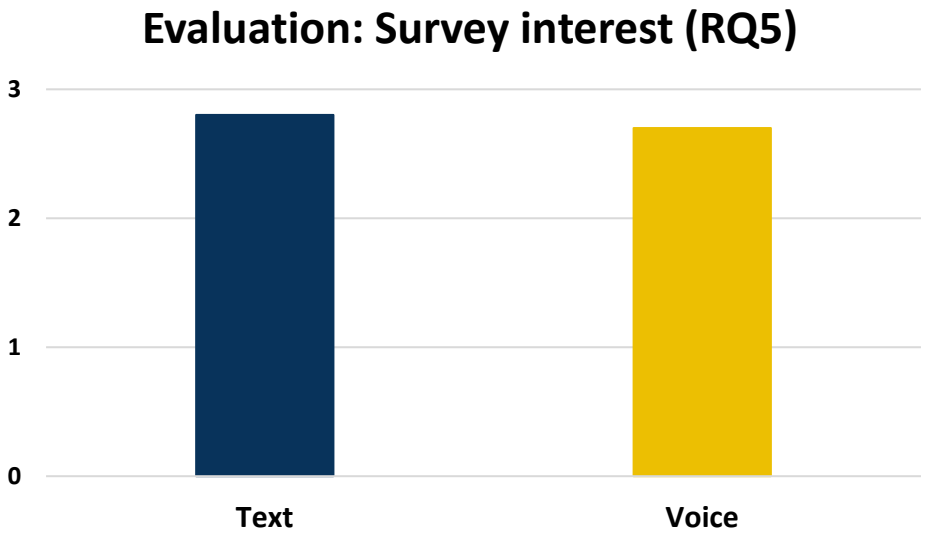


**p < 0.05. Means. t-test.*

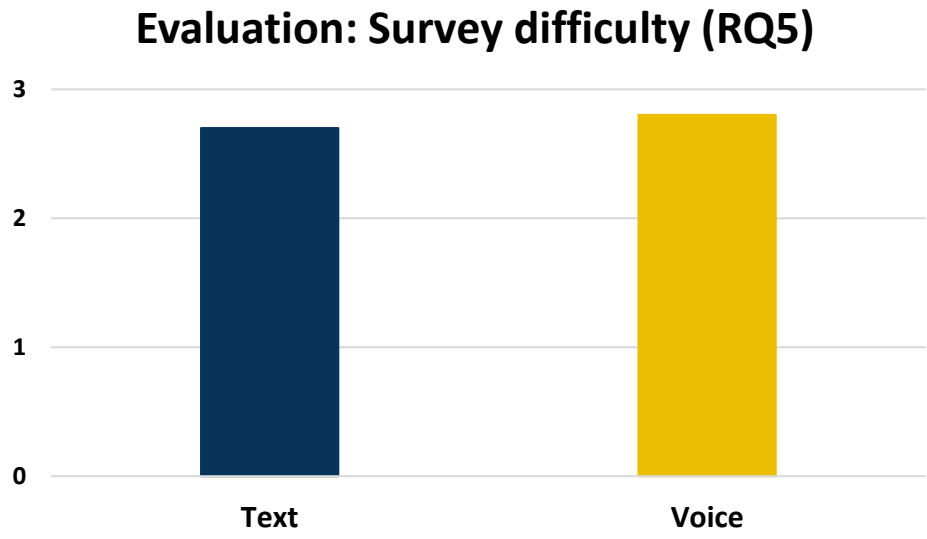


**p < 0.05. Medians. U-test.*

Results: Research Question 5



p < 0.05. Means. t-test. Question with 7 descending categories.



p < 0.05. Means. t-test. Question with 7 ascending categories.

Discussion and Conclusion

- Higher break-off and item-nonresponse for voice answers
  - *Some respondents may not willing or able*
- Longer voice answers in terms of words
  - *Respondents seem to engage in open narrations*
- Shorter voice answers in terms of response times
  - *Indicates less response burden*
- No differences in survey interest and difficulty
  - *Result on difficulty clashes with response times*
- Open questions with voice requests are a promising method
- Future research needs to tackle break-off and item-nonresponse

Literature

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Many thanks for your attention!

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