

Innovating web probing: comparing text and voice answers to open probing questions in a smartphone survey

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DZHW

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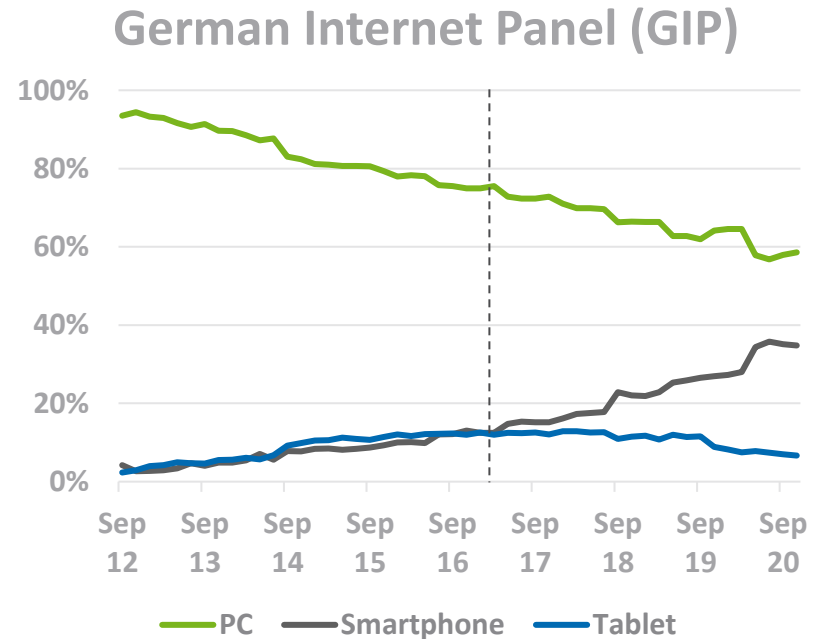
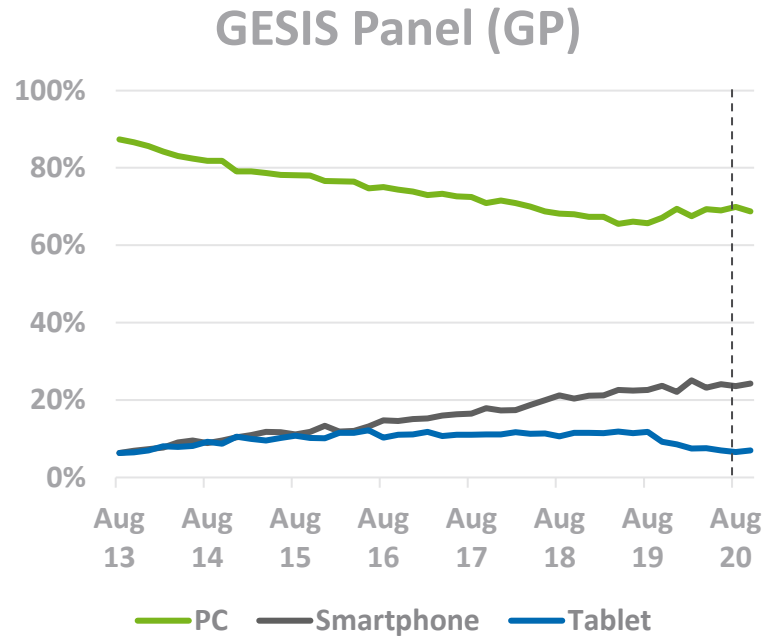
Digitalization and Research Potential

- Global digitalization tendency
 - *Increase in Internet use* (Pew Research Center 2016, 2019a)
 - *Increase in smartphone ownership* (Pew Research Center 2019b)
- New opportunities for researching (social) reality
 - *People leave traces and produce data in digital spheres* (Struminskaya et al. 2020)
- Transformation of social and behavioral sciences
 - *New conferences: „BigSurv“ and „Mobile Apps and Sensors in Surveys“*
 - *New journals: „Frontiers in Big Data“ and „Journal of Computational Social Science“*

Web Probing

- Rise of web probing studies in last decade
 - *Combining of lab-based cognitive interviews with text-based web surveys* (Behr et al. 2012; Behr et al. 2017)
 - *Benefits: Fast and less expensive, large sample sizes, and no interviewer effects*
 - *Drawbacks: Probe nonresponse and short/uninterpretable answers*
- Voice answers to probing questions
 - *Closeness to daily conversation* (Tourangeau et al. 2000)
 - *Rich information due to narrations* (Gavras & Höhne 2020; Gravras et al. 2022)
- New communication channels because of smartphones
 - *Linking established methods with technological innovations*
 - *Exploiting the increase of smartphone use in web surveys* (Gummer et al. 2023; Peterson et al. 2017; Revilla et al. 2016)

Devices in Web Surveys



Country: Germany. Prob-based online panels (GP and GIP). Six waves per year. Vertical lines indicate the introduction of mobile-optimized layouts. Calculations: Gummer et al. (2023).

Research Questions

- RQ1: Does the communication mode affect answer quality?
- RQ2: Does the communication mode affect the number of themes?
- RQ3: Does the communication mode affect survey evaluations?

Method: Study Design

The image displays three sequential screenshots of the 'forsa.omninet' survey interface. Each screenshot shows a question and navigation buttons ('Zurück' and 'Weiter').

- First Screenshot:** Question: 'Inwieweit stimmen Sie der folgenden Aussage zu oder nicht zu?' (How much do you agree or disagree with the following statement?). Statement: 'Ich fühle mich eher als Weltbürger und somit verbunden mit der Welt insgesamt und weniger als Bürger eines bestimmten Landes.' (I feel more like a world citizen and thus connected to the world in general and less as a citizen of a specific country). Response options: 'Stimme voll und ganz zu', 'Stimme zu', 'Weder noch', 'Stimme nicht zu', 'Stimme überhaupt nicht zu', 'Kann ich nicht sagen'.
- Second Screenshot:** Question: 'Wie haben Sie den Begriff "Weltbürger" in der letzten Frage verstanden?' (How did you understand the term 'world citizen' in the last question?). Instruction: 'Bitte schreiben Sie Ihre Antwort in das Feld.' (Please write your answer in the field). A text input box is provided.
- Third Screenshot:** Question: 'Wie haben Sie den Begriff "Weltbürger" in der letzten Frage verstanden?' (How did you understand the term 'world citizen' in the last question?). Instruction: 'Halten Sie das Mikrofon-Symbol gedrückt, während Sie Ihre Antwort aufnehmen.' (Hold the microphone symbol pressed while recording your answer). A red microphone icon is shown for voice recording.

- Cross-quota sample
 - *Age, gender, and education*
 - *Forsa Omninet Panel (Nov 21)*
- Between-subject design
 - *Group 1: Voice (n = 500)*
 - *Group 2: Text (n = 501)*
- 2 Questions + probes
 - *Relationship between citizens and state (ISSP 2013, 2014)*
 - *Advanced replication (Lenzner & Neuert 2017)*

Collecting Voice Data

The screenshot displays the GitHub interface for the repository `JKHoehne/SVoice`. The repository is public and has 7 stars and 1 fork. The main content area shows a file browser with the following files and folders:

- `SVoice` (refactoring Repo, 3 years ago)
- `img` (refactoring Repo, 3 years ago)
- `LICENSE` (Create LICENSE, 3 years ago)
- `README.md` (Update README.md, 3 years ago)

The `README.md` file is expanded, showing the following text:

SurveyVoice (SVoice): A comprehensive guide for recording voice answers in surveys

This repository provides the source codes of the "SurveyVoice (SVoice)" tool developed by Jan Karem Höhne, Konstantin Gavras, and Danish Daniel Qureshi. S.Voice enables researchers to record respondents' voice answers to survey questions in (mobile) web surveys. It is based on different program languages, such as JavaScript and PHP, and licensed under the Apache 2.0 License (see [here](#)). S.Voice can be implemented in browser-based survey software solutions. The recording of voice answers is generally not restricted to specific operating systems and/or Internet browsers.

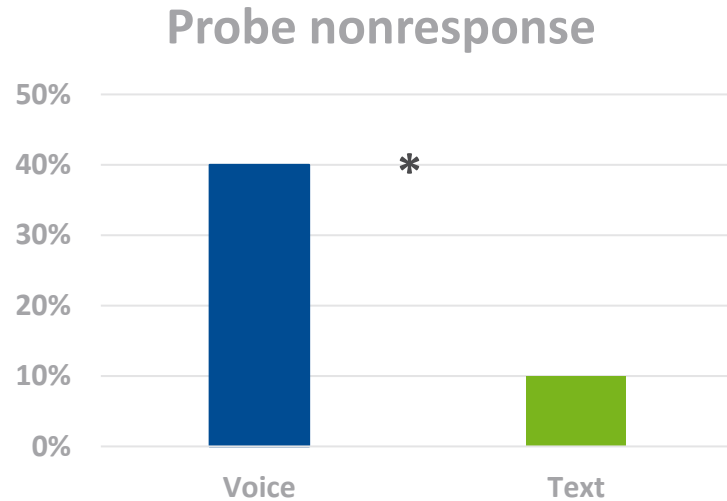
The right sidebar contains the following sections:

- About:** This repository include the code for the SurveyVoice (S.Voice) tool to implement voice recordings to mobile surveys.
- Releases:** 1 release. **First release of S.Voice** (Latest) on Mar 29, 2021.
- Packages:** No packages published.
- Contributors:** 2 contributors.

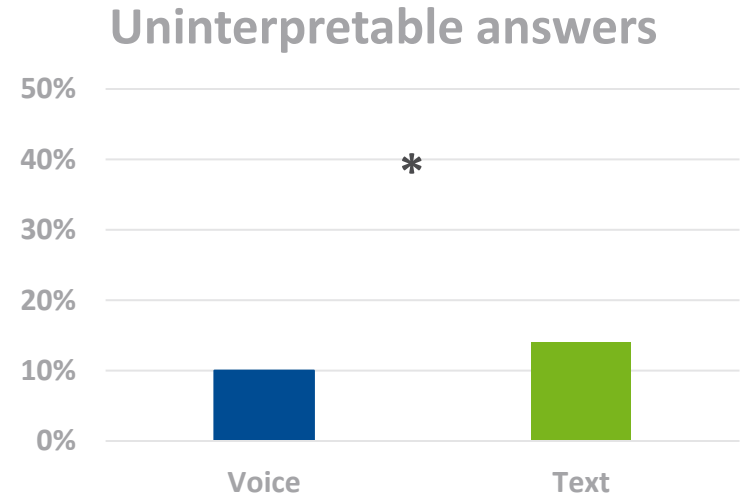
<https://github.com/JKHoehne/SVoice/tree/v1.0.0>

- SurveyVoice (S.Voice) tool (Höhne et al. 2021)
- Open-source
 - *Apache 2.0 License*
- JavaScript, CSS, HTML, and PHP
- Implementable in browser-based smartphone surveys

Results: Research Question 1

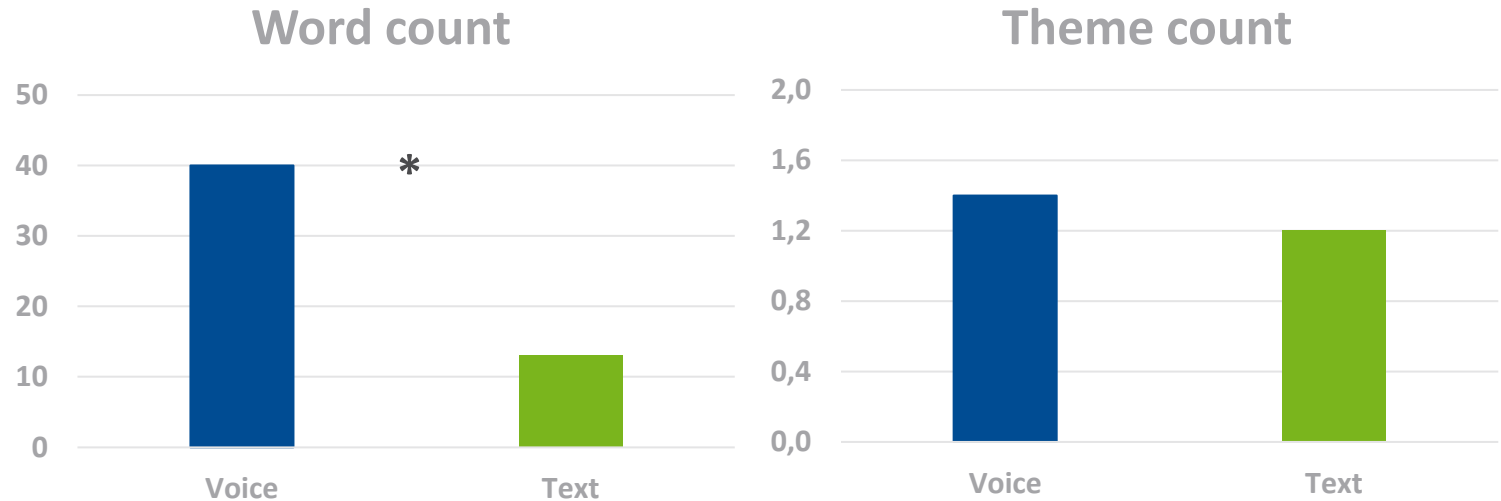


** $p < 0.05$. Z-Test.*



** $p < 0.05$. T-Test.*

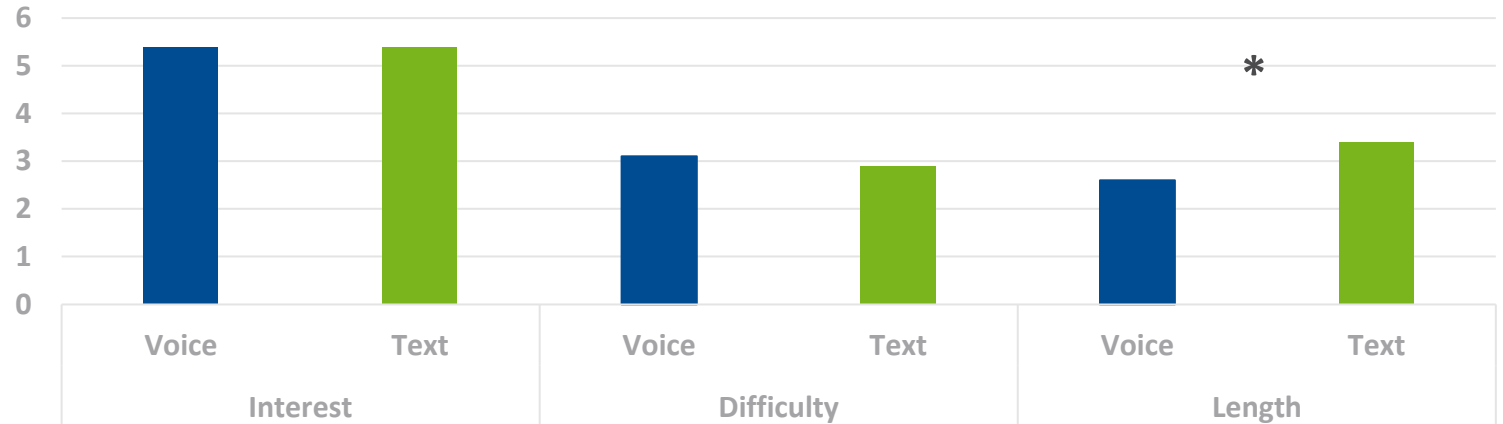
Results: Research Questions 1 and 2



**p < 0.05. T-Test.*

Results: Research Question 3

Survey evaluations



* $p < 0.05$. T-Test.

Discussion and Conclusion

- Higher share of missing data in voice answers
 - *Respondents may not be able and/or willing to provide voice answers*
 - *Reduction through (higher) incentivization and/or choice of answer format*
- Less uninterpretable voice answers and higher number of words
 - *Pointing to narrations, more information, and different cognitive answer processes*
- Some differences regarding survey evaluations
 - *The voice group evaluates the survey as less lengthy*
- Voice and text answers do not differ in number of themes
 - *Both formats produce similar respondent outcomes*
- Take home message
 - *Share of missing data in voice answers must be reduced*
 - *Voice answers potentially help to tailor web probing to some respondents*

Many thanks for your attention!

www.jkhoehne.eu

@jkhoehne

Literature I

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