On-Device and Off-Device Multitasking in Web Surveys

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Introduction

- Increase in self-administered PC and smartphone surveys.
- Lack of supervision might result in multitasking.
- We know little about multitasking.
    - On-device (e.g., checking incoming emails).
    - Off-device (e.g., watching TV).

Research goal: **Comparing different forms of multitasking across PCs and smartphones.**
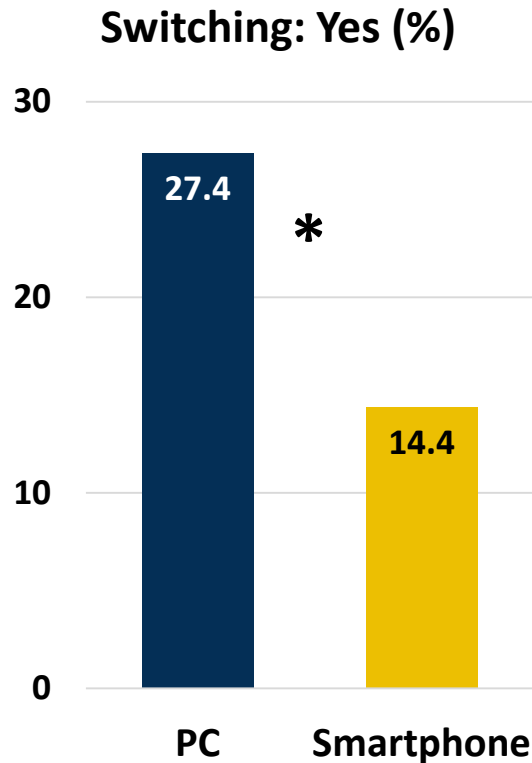
Research design

- Self-administered web survey in Germany in September/October 2018.
  - Duration: About 20 minutes.
  - Questions: Variety of topics.

- Quota sample: Age, education, gender (3-3-2).
  - Designed to represent the German population.

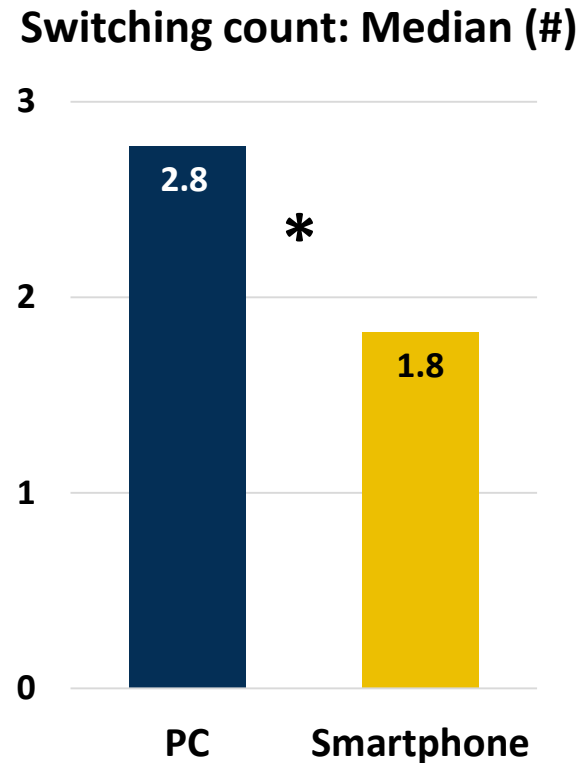- Respondents were randomly assigned to use a PC or smartphone.

Split ballot experiment

PC

n = 1,826

Smartphone

n = 1,882
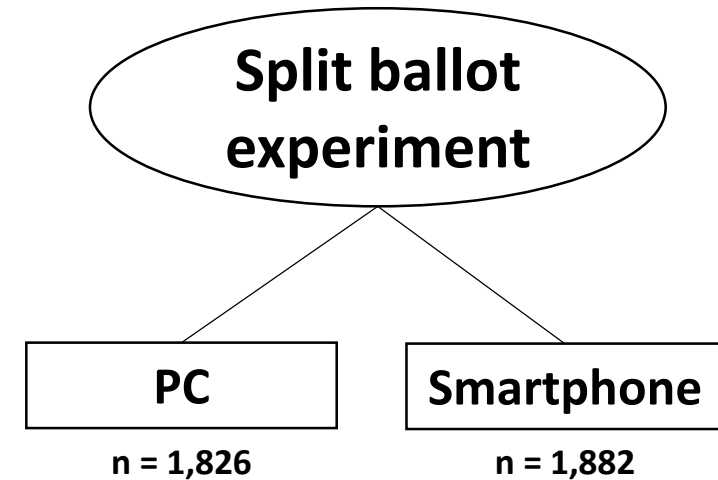
Analytical strategy

- Measuring on-device multitasking:
  - Paradata: Browser tab and window switching (JavaScript OnBlur).
    - Open-source tool "Embedded Client Side Paradata (ECSP)" (Schlosser & Höhne, 2018).
    - Gathering how often ("off-count") and how long ("off-time") respondents leave a web survey page.
  - Self-reports: Asking respondents about their behavior.

- Measuring off-device multitasking:
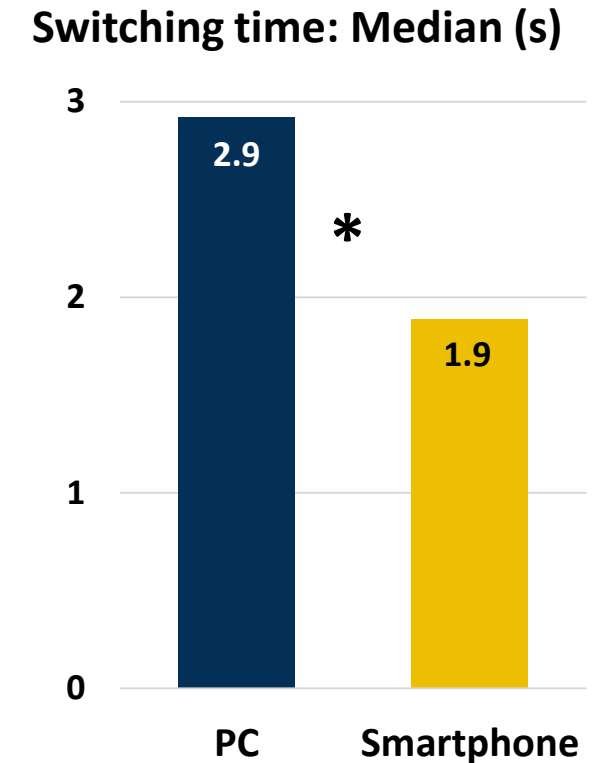 - Self-reports: Asking respondents about their behavior.

Results: On-device multitasking I

Switching: Yes (%)

- PC: 27.4
- Smartphone: 14.4

*

Base: All respondents.
*$p < 0.05$. Chi-square test.

Switching count: Median (#)

- PC: 2.8
- Smartphone: 1.8

*

Base: All switching respondents.
*$p < 0.05$. U-test.

Switching time: Median (s)

- PC: 2.9
- Smartphone: 1.9

*

Base: All switching respondents.
*$p < 0.05$. U-test.

Results: On-device multitasking II

Self-report: Yes (%)
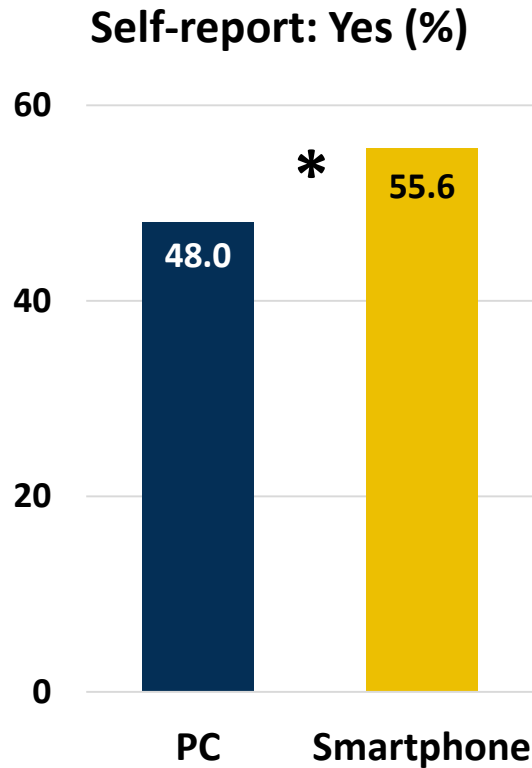

Base: All respondents.
*p < 0.05. Chi-square test.
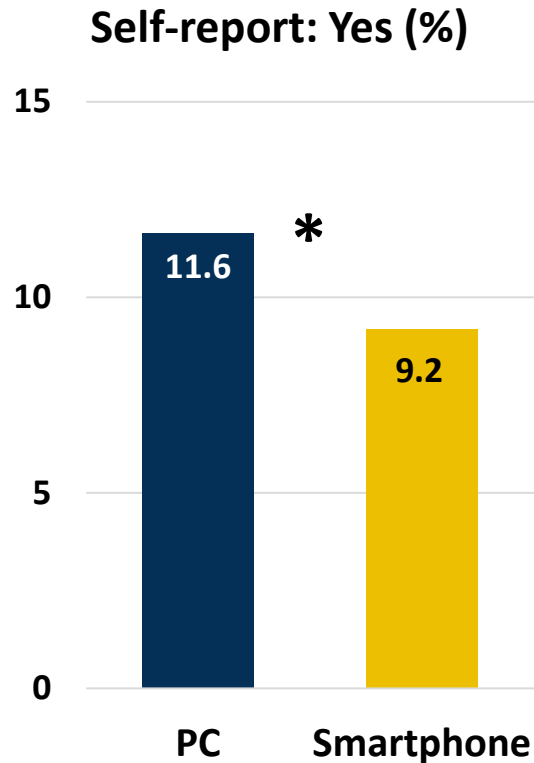
- Associations between switching and self-report (phi coefficients):
  - PC: phi = 0.20*
  - Smartphone: phi = 0.10*

*p < 0.05.
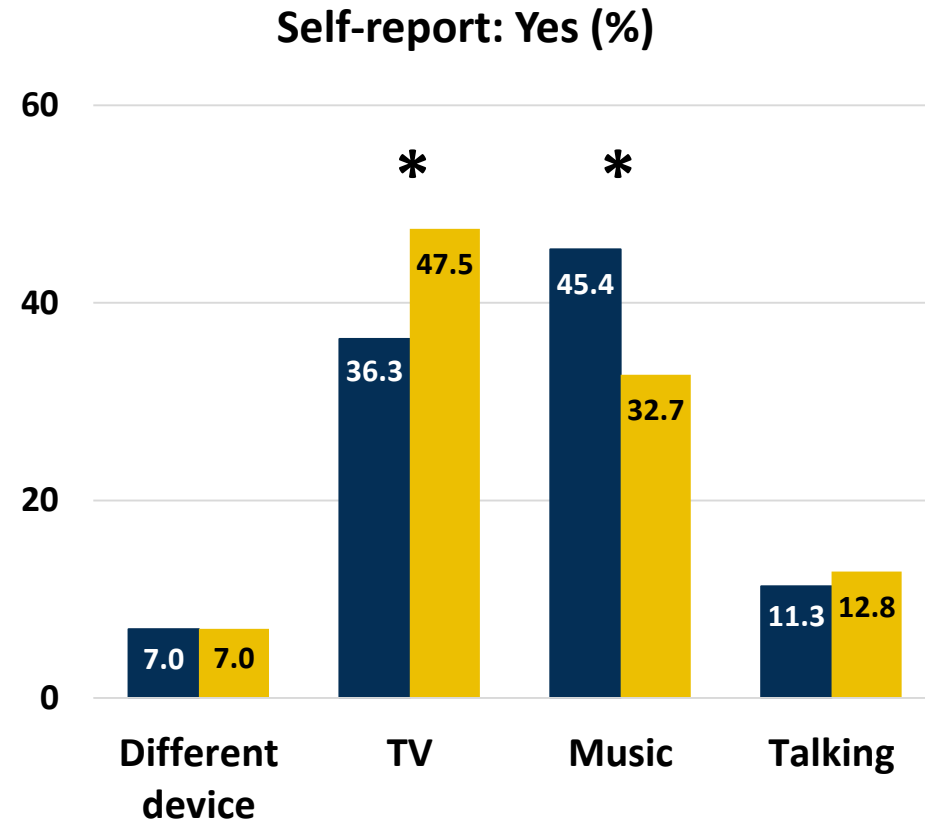
Results: Off-device multitasking

Self-report: Yes (%)

Base: All respondents.
*p < 0.05. Chi-square test.

Segmentation →

Self-report: Yes (%)

Base: All off-device multitasking respondents.
*p < 0.05. Chi-square test.

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Discussion and conclusion

- On-device and off-device multitasking on PCs and smartphones.
- On-device multitasking more common on PCs.
  - One reason might be device-related issues (e.g., screen size).
  - Paradata and self-reports yield different conclusions regarding on-device multitasking.
- Off-device multitasking more common on smartphones.
  - It depends on the type of multitasking (e.g., watching TV).

Recommendation: Track multitasking through paradata and self-reports.

Many thanks for your attention!

Contact: hoehne@uni-mannheim.de
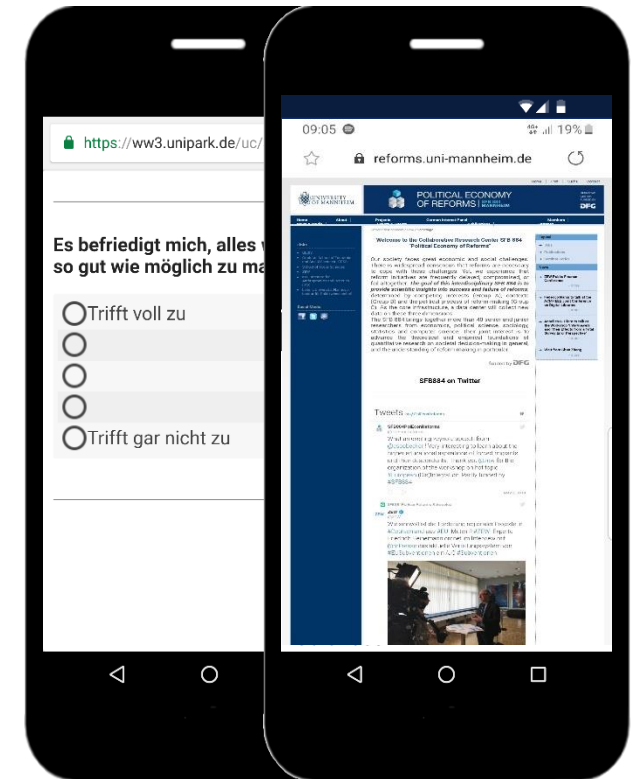
Appendix: Sample characteristics

Final sample size:	N = 3,829
Age (in years):	Mean = 46.8
Gender:	50.4% female
Education:	37.8% lower secondary school
	30.0% intermediate secondary school
	32.2% at least college preparatory secondary school
Daily usage:	PC: 62.3%; smartphone: 88.1%; and internet: 94.6%
Survey participation:	Mean = 63.9 (surveys during last 12 months)

There were no statistically significant differences regarding age, gender, education, and internet usage between the two experimental groups. However, there were statistically significant differences regarding PC and smartphone usage, and survey participation.

Appendix: Browser tab and window Switching

OnBlur on PC

OnBlur on smartphone