

WAPOR



Mixed Mode and Mixed Device Surveys: Why, When, and How

Edith de Leeuw & Anne Elevelt
Utrecht University

WAPOR Webinar, July 9 2020

WAPOR Webinar



Part 2

Mixed Device Surveys

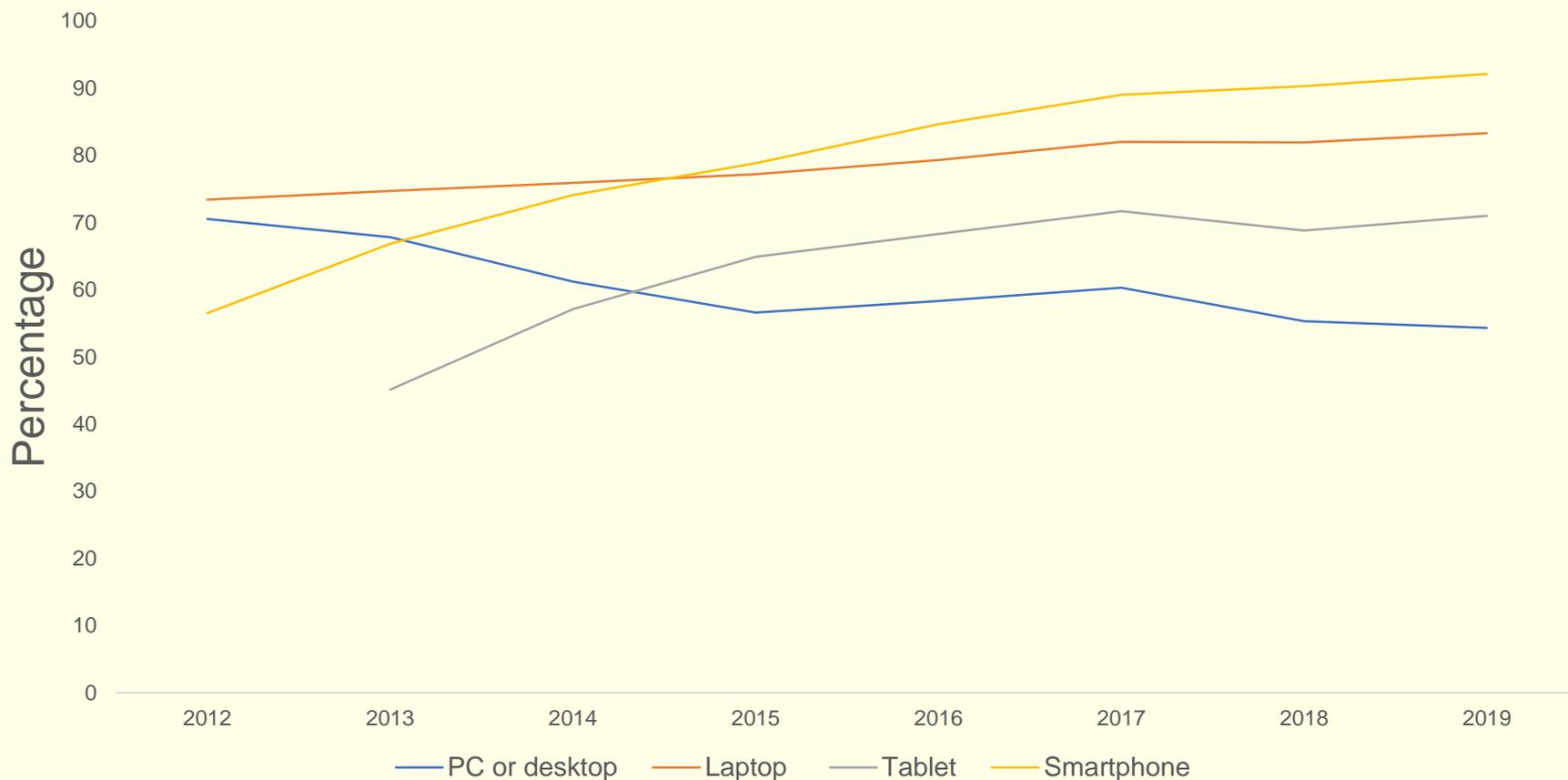
Online surveys are now
mixed device surveys.





Device Ownership in the Netherlands

Devices for Internet Use





Share of internet traffic by smartphones

Combined Traffic Worldwide (2013 to 2019)



Online surveys are now
mixed device surveys.



-
1. What does this mean for your sample -> representation error
 2. What does this mean for your design? -> measurement error

Devices



- ❑ PC/Laptop
- ❑ Mobiles:
 - ❑ Smartphone
 - ❑ Tablet

Differ in:

- ❑ Screen size
- ❑ Keyboard or not



What does this mean for
your sample?



Coverage error

- Digital Divide
- Sending invitations
 - Email
 - SMS
 - Random Digit Dialing
 - QR Codes



Selection bias

- ❑ Device ownership
- ❑ Device familiarity
- ❑ Sociodemographics
 - ❑ Age
 - ❑ Education
 - ❑ Income

Representation error



- ❑ Increase coverage
 - ❑ Able to attract hard-to-reach populations, like young people and refugees

- ❑ More options for survey invitation delivery or reminders
 - ❑ Anywhere, anytime

- ❑ Higher break-off when not smartphone proof

What does this mean for
your survey design?



Optimizing or standardizing?

- ❑ Optimizing
 - ❑ Responsive design
 - ❑ *Device adaptive*
- ❑ Standardizing
 - ❑ PC first
 - ❑ Smartphone friendly
 - ❑ Smartphone first
 - ❑ *Device agnostic*

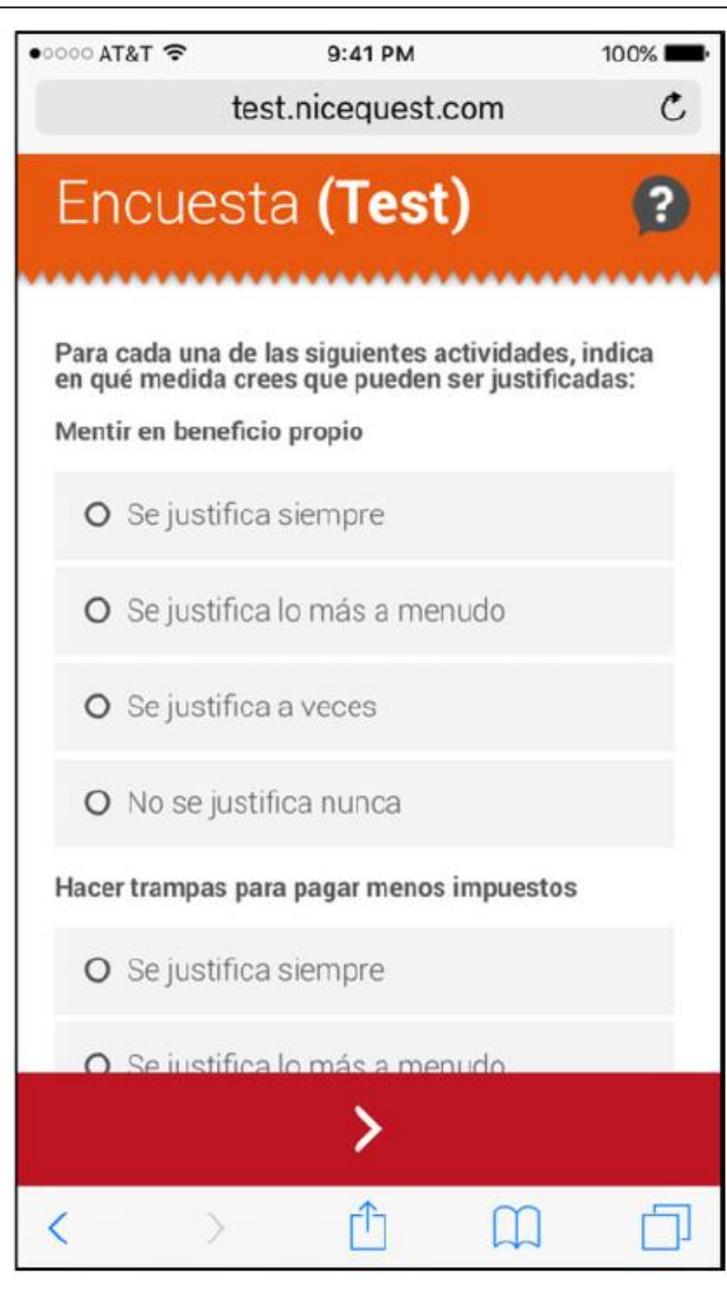
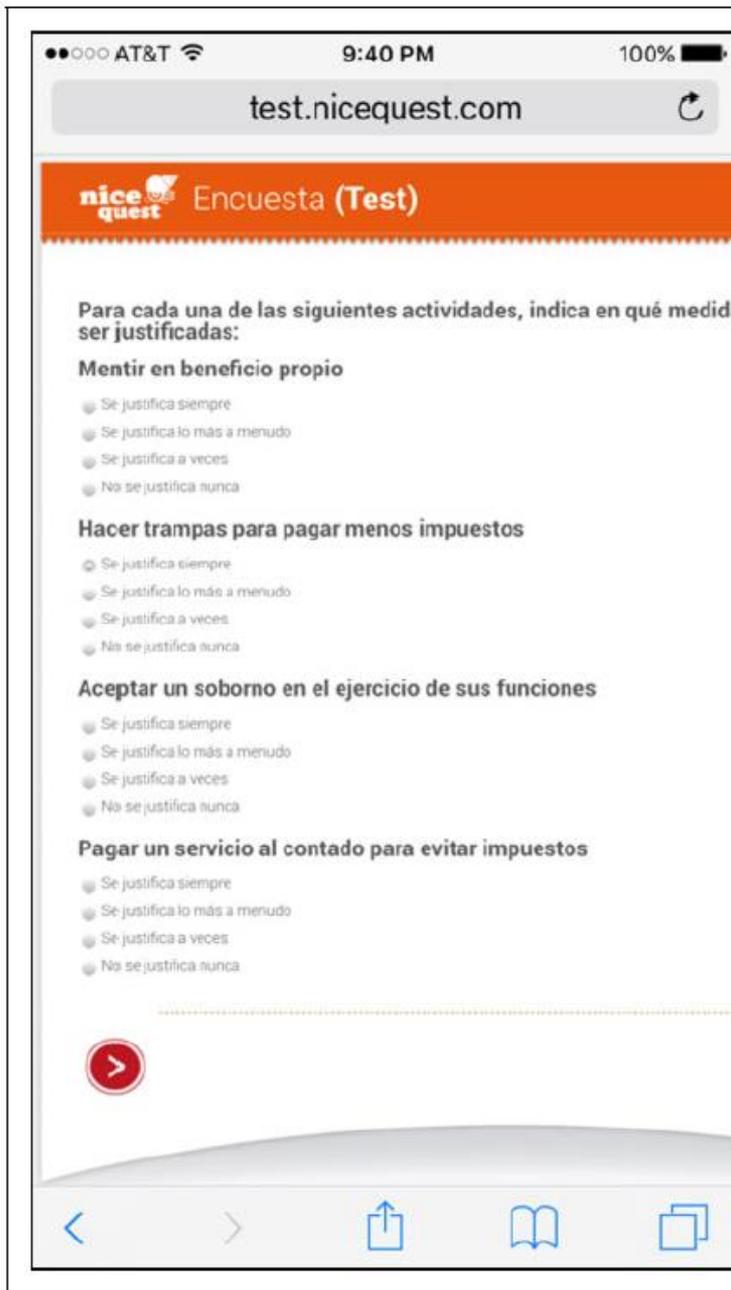


Figure 1. Examples of “non-optimized” (left) and “optimized” designs (right) taken from questionnaires (in Spanish) used by Revilla, Toninelli, and Ochoa (2017). (Antoun et al., 2017)



Think about:

- App vs browser
- Visual design
- Navigation
- Length



App versus browser

- ❑ Respondent satisfaction is higher for apps
- ❑ Apps can deploy more advanced features
 - ❑ More and more possible through JavaScript though
- ❑ Apps need to be developed
- ❑ Apps need to be installed -> dropout

Visual Design

(see Antoun et al, 2018)



Design Heuristics:

- Readability
- Ease of selection
- Visibility across the page
- Simplicity of design features
- Predictability across devices

Use device detection to display appropriately for screen size.

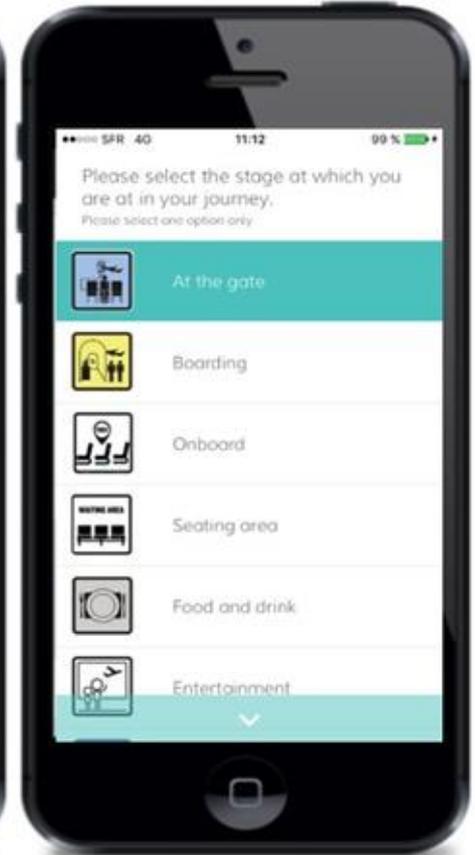
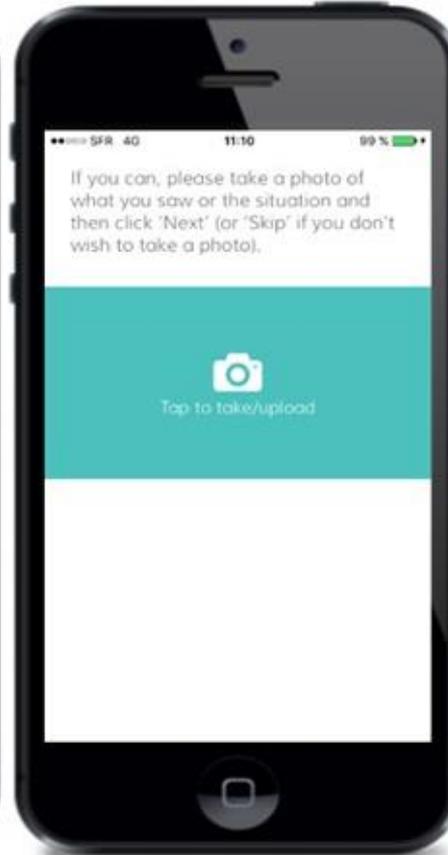
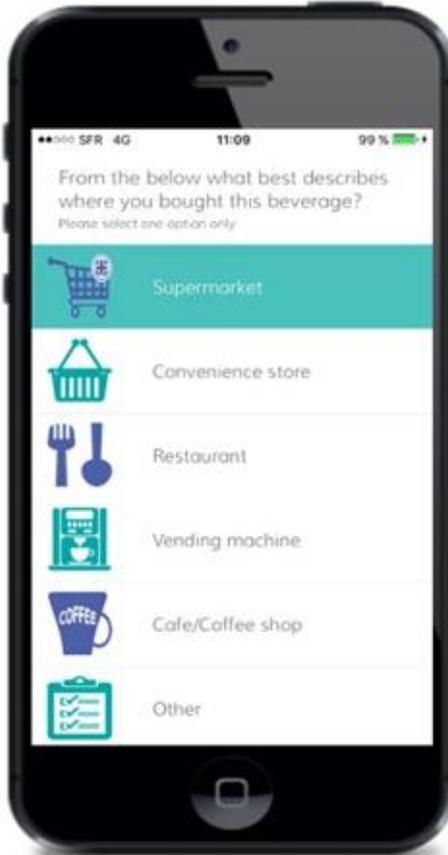
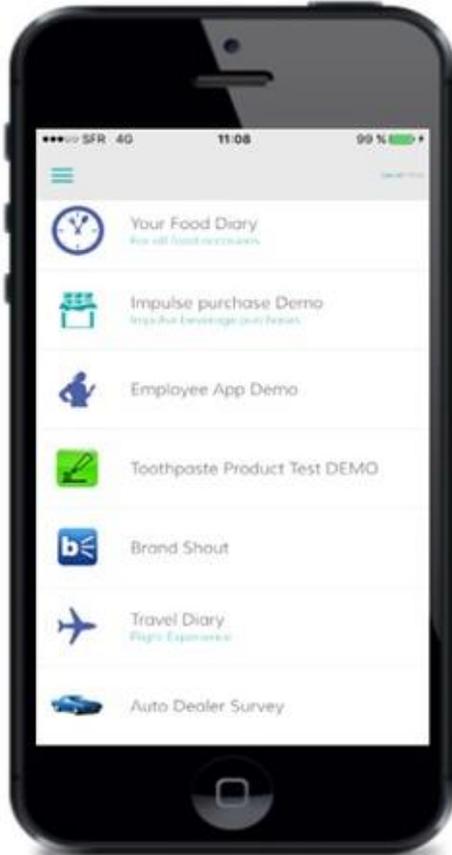
Visual Design

(see Antoun et al, 2018)



- ❑ Larger fonts
- ❑ Larger response options (tiles/wide buttons)
- ❑ Content fit to width of screen
- ❑ No long (introduction) texts
- ❑ Use pictograms
- ❑ Simple questions
- ❑ No grids
- ❑ Eliminate visual distractions

Example

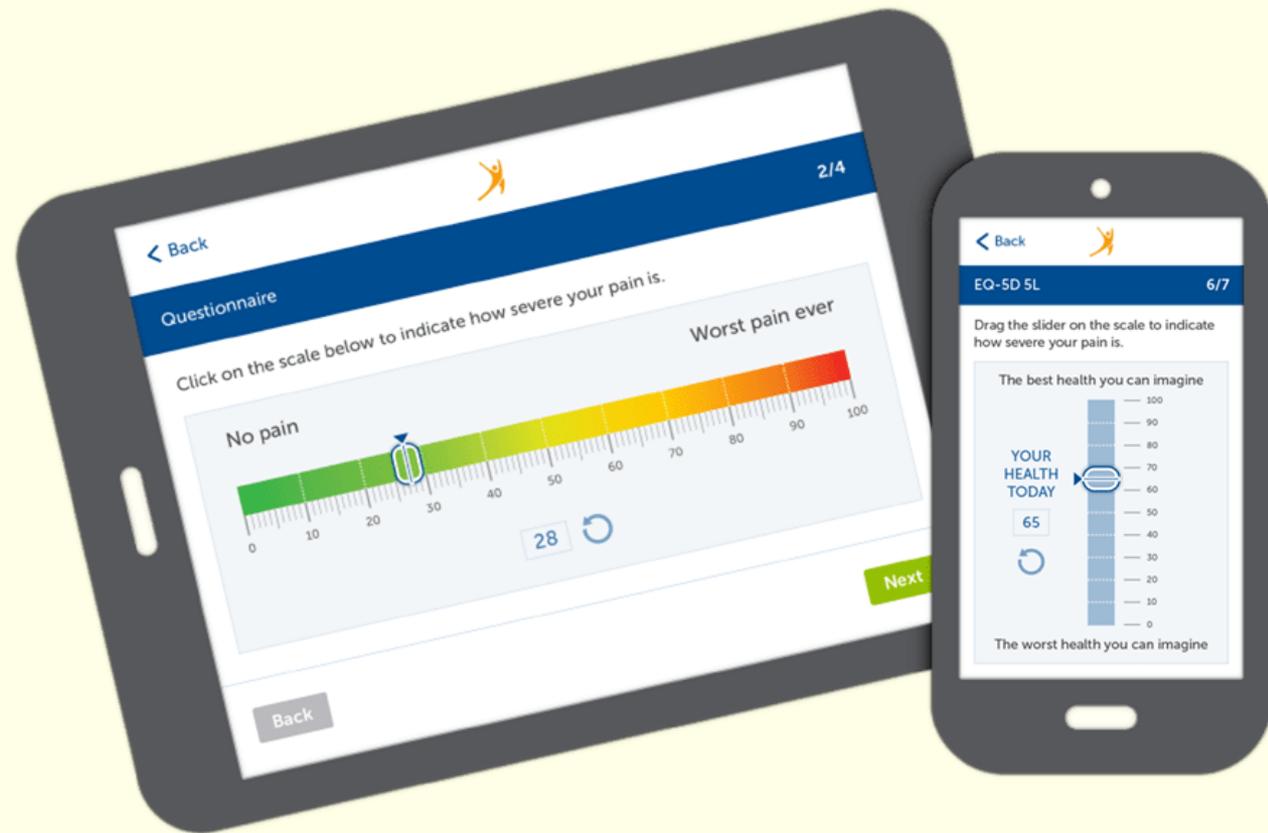
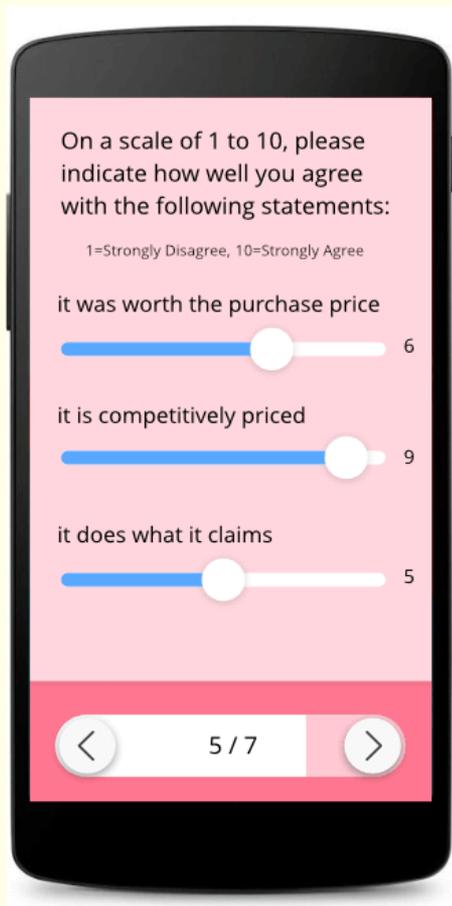


@Ipsos.

GAME CHANGERS

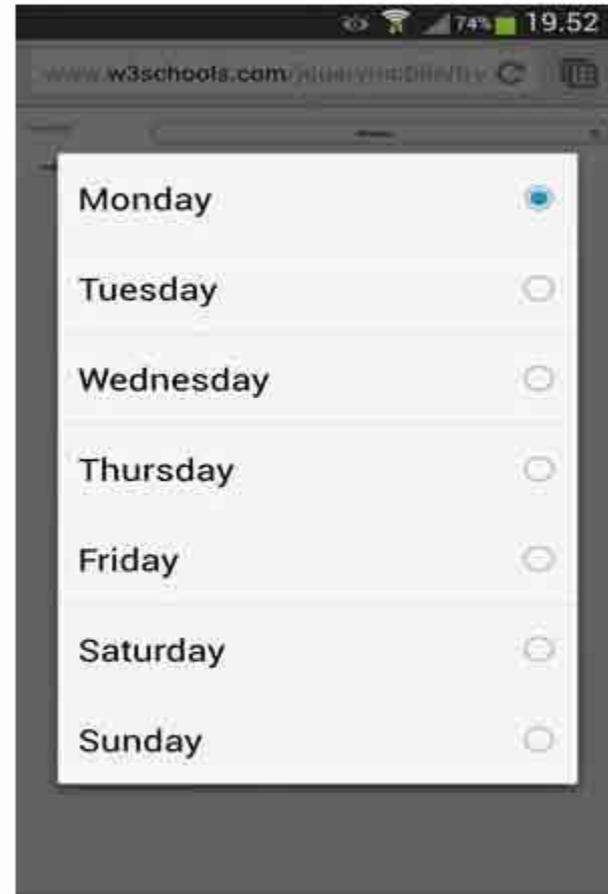


Slider bars

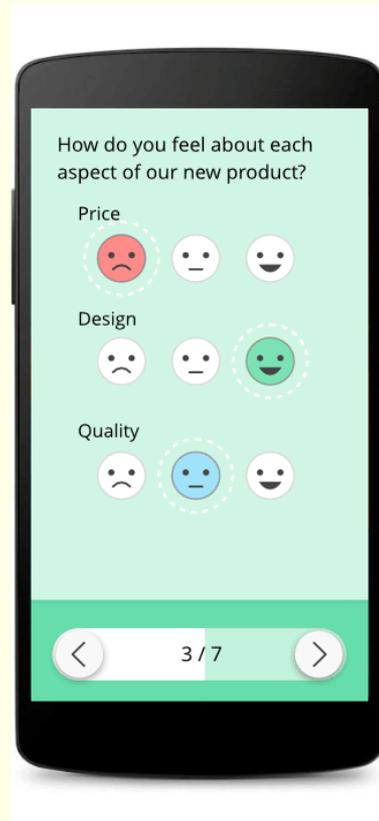
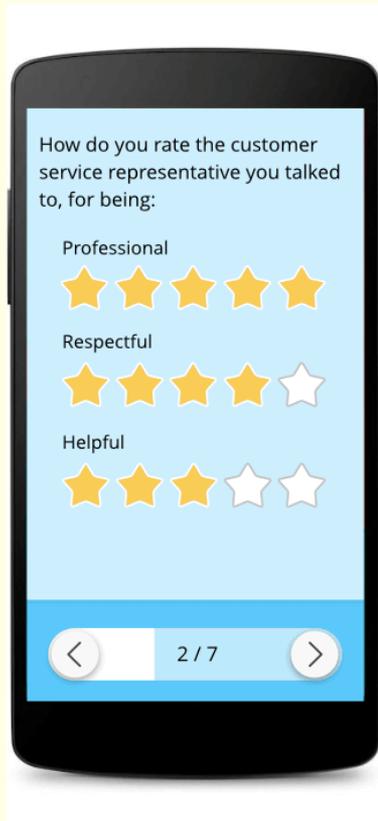


(e.g. Buskirk & Andrus, 2014; Toepoel & Funke, 2018)

Drop-Down Menus



Smileys



Don't do this...



Carrier 100%

Old Survey Company

How do you evaluate the quality of our last week's event?

	Reception	Music	Food	Hosting	Be
Excellent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Very good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fair	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Submit

< >



Navigation

- Scrolling
- Paging
- Auto-forward



SESSION FEEDBACK

Improving Attendance

Question 1 of 5

● ○ ○ ○ ○

How satisfied were you with this particular session?

Extremely Satisfied

Satisfied

Somewhat Satisfied

Disappointed

NEXT QUESTION

Do you agree or disagree with the following statements:

SurveyLegend is the most user-friendly survey tool on this planet

Strongly agree

Agree

Neither disagree or agree

Disagree

Strongly disagree

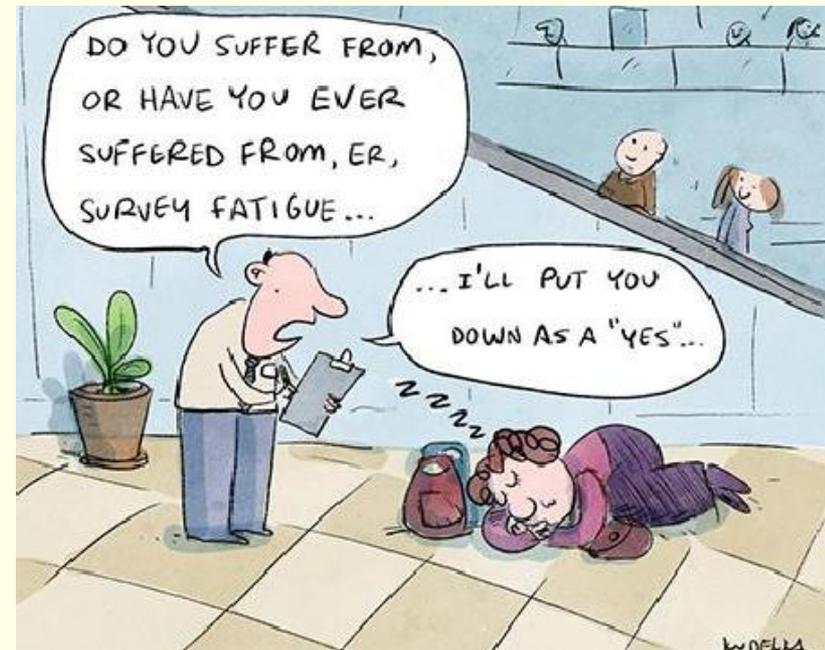
N/A

Submit

Length



- Keep it short.
 - Respondents are not willing to do long surveys on smartphones
 - Higher termination rates
 - Fatigue



(e.g Couper et al., 2017, KANTAR, 2014; Link et al., 2014;)



Measurement error

Little effect when designed:

- Smartphone first
- Optimally

- No reason to believe mixed-device is a problem.
- Adjustment is more difficult than preventing device effects.

Using mobiles to go
beyond the traditional
survey.



New opportunities

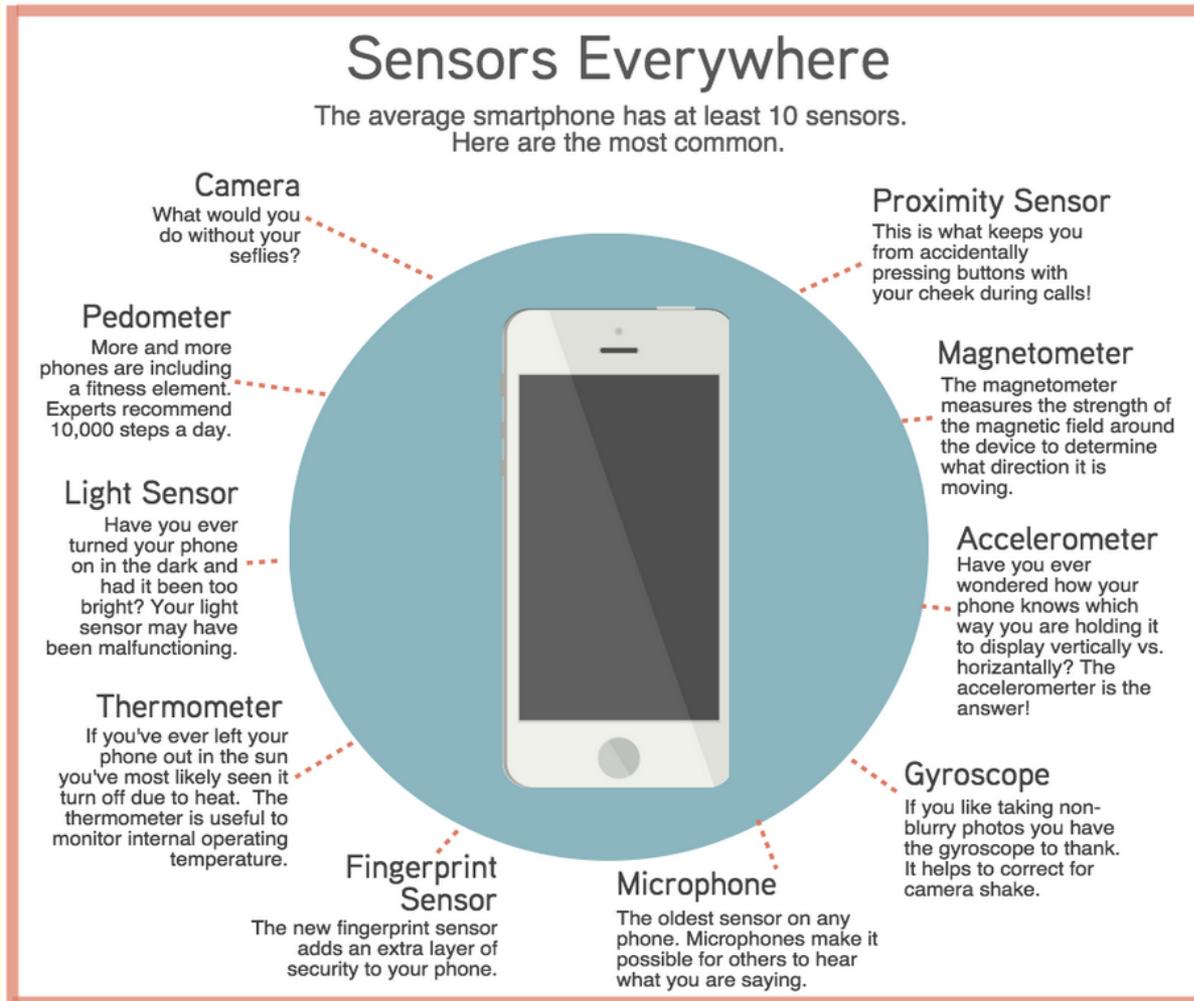
- Passive data collection
 - Paradata
 - Sensor data
- Research apps



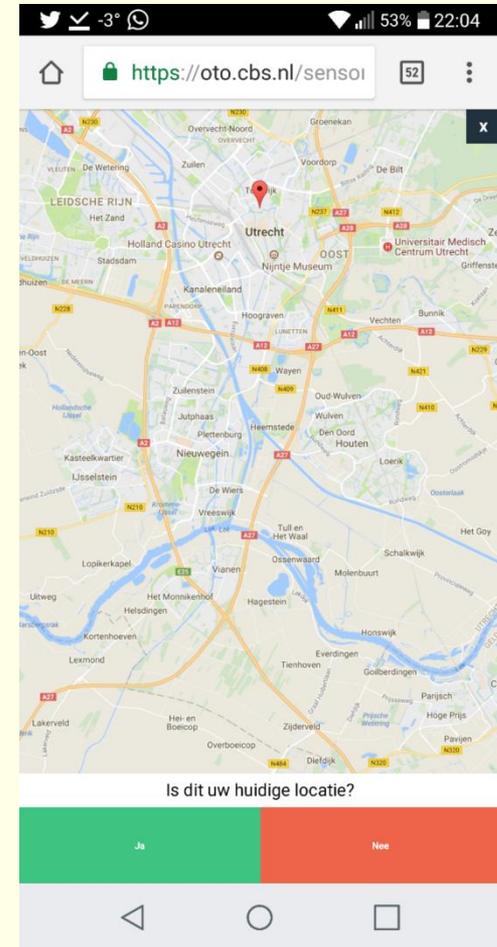
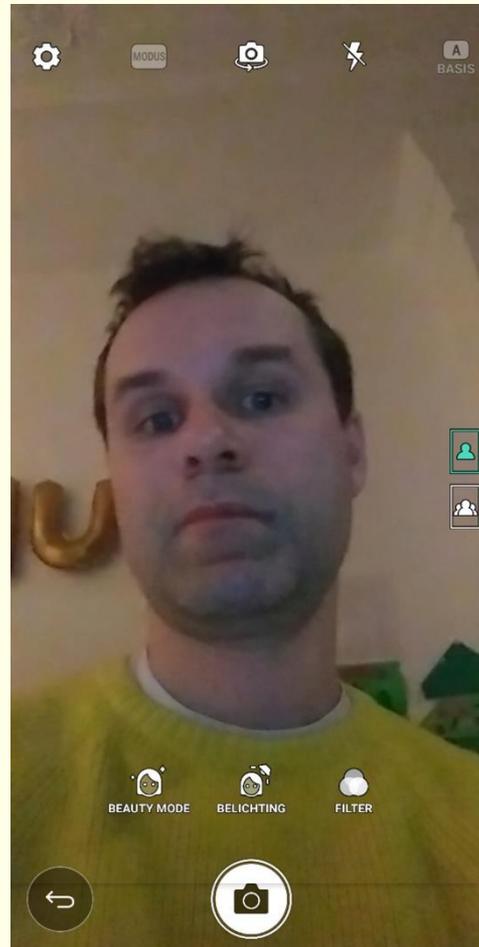
Are respondents willing to do this?

- GDPR
- Large variation between tasks and countries
- Smartphone familiarity
- Optimizing consent question
 - Sponsor: University
 - Wording
 - Giving control
 - Incentive

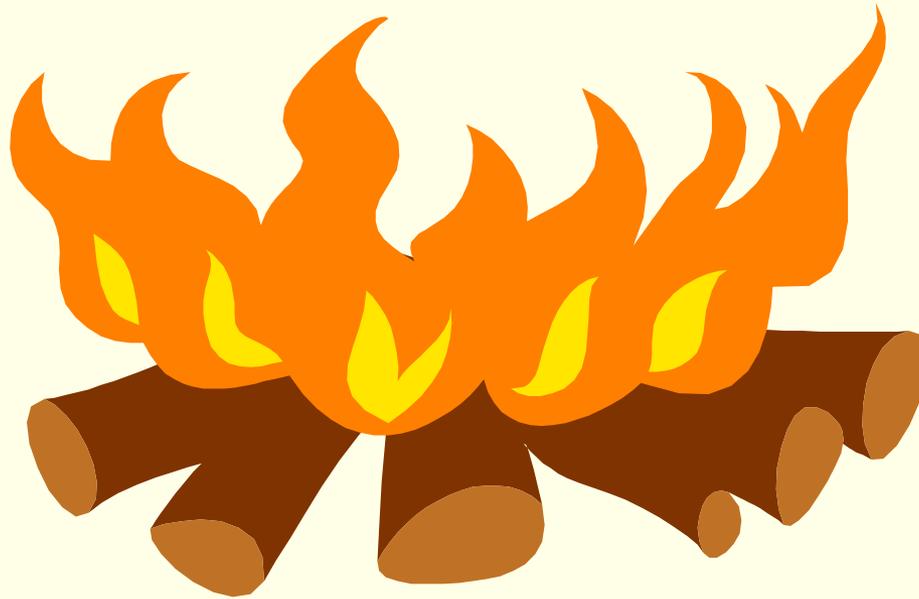
Sensor data



Browser example *(Struminskaya et al, 2020)*



Burning Questions?





Mixed Device is not a problem



If you can't do it on
a smartphone;
Don't do it!



lizclimo.tumblr.com

WAPOR



DISCUSSION

tenki hvala ขอขอบคุณคุณ takk спасибо kam sah hamnida
дзякуй dhanyavadagalu tack
gracias blagodaram mési xièxie tanemirt dank je
djere dieuf rahmet enkosi mochchakkeram trugarez
arigatô danke kop khun krap faafetai lava
manana diolch shukriya ありがとう kia ora dankon děkuji
ačiū grazzi mamnun gràçie kiitos spas
dhanyavad barka mamnun sulpáy tapadh leat chnorakaloutioun
gratias ago tau dankie शुक्रिया gràcies আল্লাহ
teşekkür ederim bayarlalaa obrigada
mahalo didi madloba saç ευχαριστώ obrigada
sagolun murakoze taiku sukriya obrigado chokrane rahmat dakujem
terima kasih misaotra welalin mercé najis tuke = nanni
asante grazie nandri 謝謝 mersi sobodi köszönöm
mauruuru matondo cam ơn bạn go raibh maith agat merci vinaka شكراً
paldies ngiyabonga

References



- ❑ Antoun, C., Katz, J., Argueta, J., & Wang, L. (2018). Design heuristics for effective smartphone questionnaires. *Social Science Computer Review*, 36(5), 557-574.
- ❑ Antoun, C., & Cernat, A. (2019). Factors Affecting Completion Times: A Comparative Analysis of Smartphone and PC Web Surveys. *Social Science Computer Review*,.
- ❑ Arn, B. S. Klug and J. Kolodziejcki. 2015. Evaluation of an adapted design in a multi-device online panel. *Methods, data, analysis*, 9, 2, 185-2012.
- ❑ Beuthner, C., Daikeler, J., & Silber, H. (2019). Mixed-Device and Mobile Web Surveys.
- ❑ Bosnjak, M., Bauer, R., & Weyandt, K. W. (2018). Mixed Devices in Online Surveys: Prevalence, Determinants, and Consequences. In Theorbald, A. (ed). *Mobile Research*(pp. 53-65). Springer Gabler, Wiesbaden.
- ❑ Buskirk, T.D. and C.H. Andrus.2014. Making Mobile Browser Surveys Smarter. Results from a Randomized Experiment Comparing Online Surveys Completed via Computer or Smartphone. *Fieldmethods*, 26,4, 322-342

References 2



- ❑ Couper, M. P., Antoun, C., & Mavletova, A. (2017). Mobile Web Surveys. *Total Survey Error in Practice*, 133-154.
- ❑ Couper, M. P., & Peterson, G. J. (2017). Why do web surveys take longer on smartphones?. *Social Science Computer Review*, 35(3), 357-377.
- ❑ De Bruijne, M. and A. Wijnant. 2014a. Improving response rates and questionnaire design for mobile web surveys. *Public Opinion Quarterly*, 78, 4, 951-962.
- ❑ Elevelt, A., Lugtig, P.J. & Toepoel, V. (2019). Doing a Time Use Survey on Smartphones Only: What Factors Predict Nonresponse at Different Stages of the Survey Process?. *Survey Research Methods*, 13 (2), (pp. 195-213).
- ❑ Elevelt, A., Bernasco, Wim, Lugtig, P.J., Ruiter, S. & Toepoel, V. (2019). Where You at? Using GPS Locations in an Electronic Time Use Diary Study to Derive Functional Locations. *Social Science Computer Review*
- ❑ Haan, M., Lugtig, P., & Toepoel, V. (2019). Can we predict device use? An investigation into mobile device use in surveys. *International Journal of Social Research Methodology*, 22(5), 517-531.

References 3



- ❑ Haan, M., Bakker, J., Schouten, J.G., Lugtig, P., Toepoel, V., Struminskaya, B., Giessen, D. & Meertens, V. (2018) “Testing an Auto Forward Design in a Long Online General Population Survey.”
- ❑ Halder, A., H.S. Bansal, R. Knowles, J. Eldridge and M. Murray. 2016. Shorter interviews, longer surveys. Optimising the survey participant experience whilst accommodating ever expanding client demands. Proceedings of the Association for Survey Computing, 7.
- ❑ Höhne, J. K., & Schlosser, S. (2019). SurveyMotion: What can we learn from sensor data about respondents' completion and response behavior in mobile web surveys?, *International Journal of Social Research Methodology*, 22 379-391.
- ❑ Keusch, F., Leonard, M. M., Sajons, C., & Steiner, S. (2019). Using smartphone technology for research on refugees: Evidence from Germany. *Sociological Methods & Research*, 0049124119852377.
- ❑ Lambert, A. D., & Miller, A. L. (2015). Living with smartphones: Does completion device affect survey responses?. *Research in Higher Education*, 56, 166-177.

References 4



- ❑ Link, M. W., Murphy, J., Schober, M. F., Buskirk, T. D., Hunter Childs, J., & Langer Tesfaye, C. (2014). Mobile technologies for conducting, augmenting and potentially replacing surveys: Executive summary of the AAPOR task force on emerging technologies in public opinion research. *Public Opinion Quarterly*, 78(4), 779-787.
- ❑ Lugtig, P., Toepoel, V., & Amin, A. (2016). Mobile-only web survey respondents. *Survey Practice*, 9(4).
- ❑ Lugtig, P., V. Toepoel, M. Haan, R. Zandvliet & L. Klein Kranenburg (2019). Recruiting young and urban groups into a probability-based online panel by promoting smartphone use. *Methods Data Analysis*.
- ❑ Mac Ginty, R., & Firchow, P. (2017). Including Hard-to-Access Population Using Mobile Phone Surveys and Participatory Indicators. *Sociological Methods & Research*. DOI: 10.1177/0049124117729702
- ❑ Mavletova, A. and M. P. Couper. 2015. A meta-analysis of breakoff rates in mobile web surveys. In: Toninelli, D. Pinter, R., and de Pedraza, P. (eds) *Mobile Research Methods: Opportunities and Challenges of Mobile Research Methodologies*. pp81-98. London: Ubiquity Press.

References 5



- ❑ Mavletova, A., Couper, M. P., & Lebedev, D. (2017). Grid and Item-by-Item Formats in PC and Mobile Web Surveys. *Social Science Computer Review*, 0894439317735307.
- ❑ Roßmann, J., Gummer, T., & Silber, H. (2018). Mitigating satisficing in cognitively demanding grid questions: Evidence from two web-based experiments. *Journal of Survey Statistics and Methodology*, 6, 376400.
- ❑ Sakshaug, J. W., Schmucker, A., Kreuter, F., Couper, M. P., & Singer, E. (2019). The effect of framing and placement on linkage consent. *Public opinion quarterly*, 83(S1), 289-308.
- ❑ Struminskaya, B., Toepoel, V., Lugtig, P., Haan, M., Luiten, A., Schouten, B. Mechanisms of willingness to share data collected using smartphone sensors and the stability of willingness: Evidence from the general population in the Netherlands. *Public Opinion Quarterly*
- ❑ Toepoel, V., & Funke, F. (2018). Sliders, visual analogue scales, or buttons: Influence of formats and scales in mobile and desktop surveys. *Mathematical Population Studies*, 25(2), 112-122.

References 6



- ❑ Toepoel, V. and P. Lugtig. 2015. Online surveys are mixed-device surveys. *Methods, Data, Analysis*, 9, 2, 155-162.
- ❑ Toepoel, V. and P. Lugtig. 2014. What Happens if You Offer a Mobile Option to Your Web Panel? Evidence from a probability-based panel of Internet users. *Social Science Computer Review*, 32, 4, 1-17.
- ❑ Toepoel, V., B. Vermeeren & B. Metin (2019) Smileys, stars, hearts, buttons, tiles or grids: influence of response format on substantive response, questionnaire experience and response time. *Bulletin Methodology Sociologique*
- ❑ Wells, T., J. Bailey, and M.W. Link. 2013. Comparison of smartphone and online computer survey administration. *Social Science Computer Review*, 32,2, 238–255.

General Information



□ Contact information:

- Anne Elevelt
- Department of Methodology & Statistics, Utrecht University
- E-mail: a.elevelt@uu.nl
- LinkedIn: <https://www.linkedin.com/in/annelevelt/>
- Google Scholar:
<https://scholar.google.nl/citations?user=HV4GUCIAAAAJ&hl=nl>

□ Acknowledgements

- Special thanks to Vera Toepoel (UU) and Peter Lugtig (UU).