Utrecht University

Questionnaire design for smartphones (and tablets): *an on-going journey from mobile unfriendly to mobile friendly to mobile optimization*

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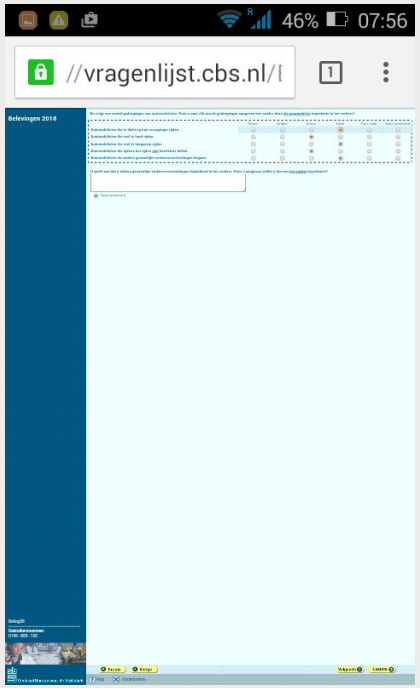
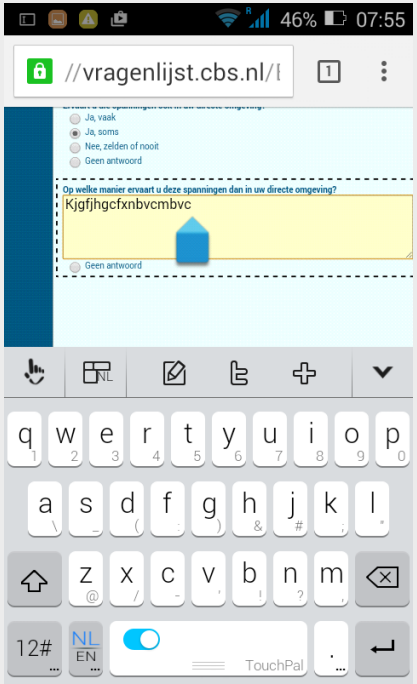
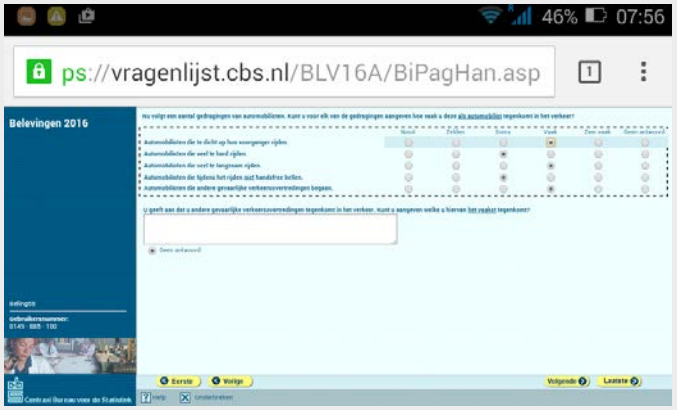
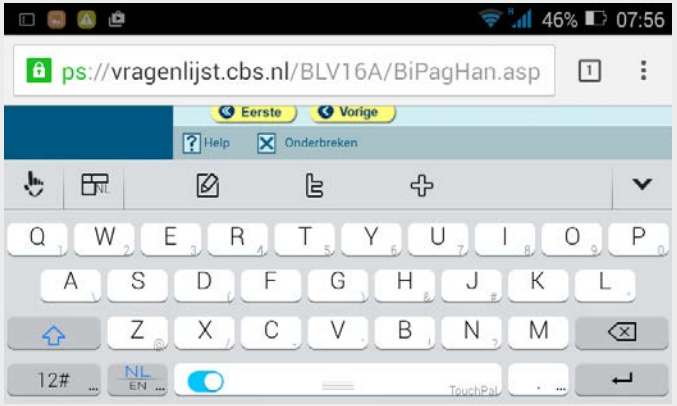
Statistics Netherlands

Mobile unfriendly surveys









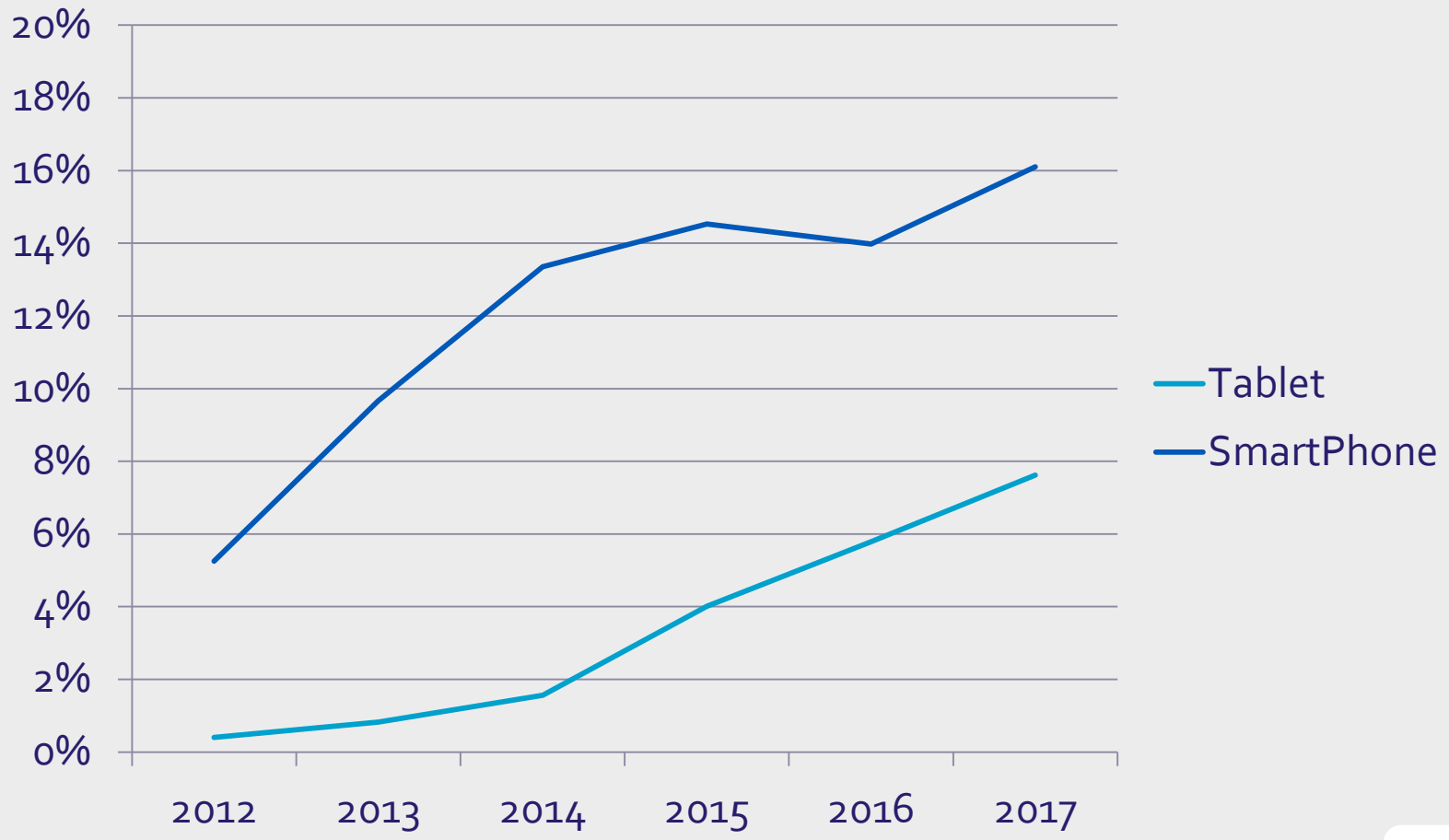
What can we do?

1. **Do nothing**
2. Explicitly discourage the use of a mobile device
3. Make the survey mobile friendly
4. Optimize surveys for mobile devices
5. *Build a specific app for mobile devices*

1. Doing nothing: Can we get away with it?

1. Is the amount of mobile respondents neglectable?
2. Are mobile respondents similar to non-mobile respondents (background & answers)?

Is the amount of mobile respondents neglectable?



Are mobile respondents similar to non-mobile respondents?

	Tablet (vs. Desktop)	Smartphone (vs. Desktop)
Age	No difference	younger
Gender	No/small difference	More female
Income	No difference	Lower
Education	No/small difference	lower
Ethnicity /nationality	No difference	More ethnic background

Differences in answer distribution (device effects)

- Longer question text
- Grid/matrix questions

What can we do?

~~1. Do nothing~~

2. Explicitly discourage the use of a mobile device

3. Make the survey mobile friendly

4. Optimize surveys for mobile devices

5. *Build a specific app for mobile devices*

2. Explicitly discourage the use of a mobile device

- In the survey invitation
  → doesn't work*
- On the introduction page
  → doesn't work*
- Blocking mobile device access
  → This really doesn't work. You will lose about half of your mobile respondents.

** Based on only a few studies*

What can we do?

1. ~~Do nothing~~

2. ~~Explicitly discourage the use of a mobile device~~

3. **Make the survey mobile friendly**

4. Optimize surveys for mobile devices

5. *Build a specific app for mobile devices*

3. Make the survey mobile friendly

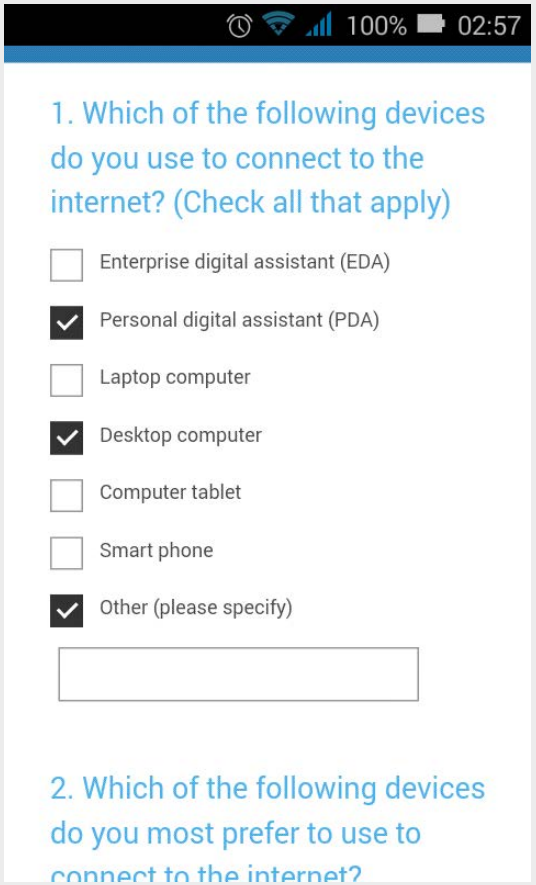
What is mobile friendly?

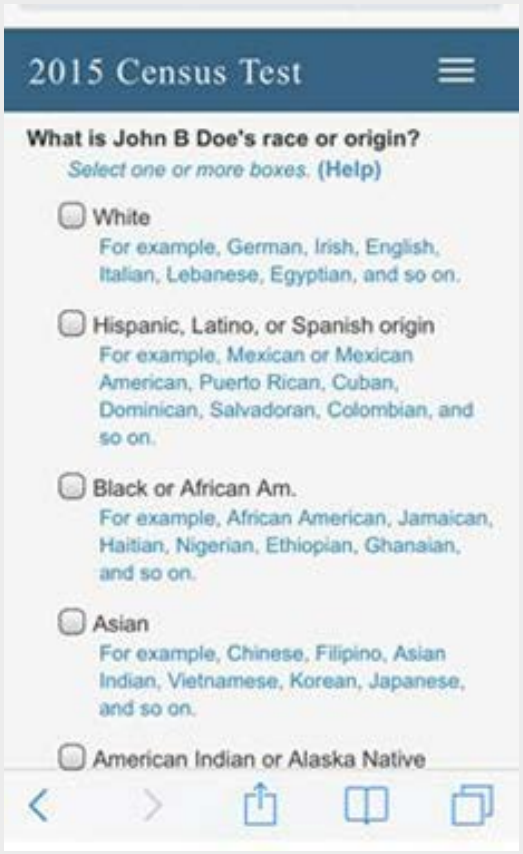
- Content is displayed properly
- Text is readable without the need to zoom in
- Selecting items is easy
- No horizontal scrolling
- *Grid questions are transformed to multiple single choice questions*

Lorch, J., Mitchell, N. (2014). Why you need to make your surveys mobile friendly now. Survey Sampling international

Radio Buttons: do's

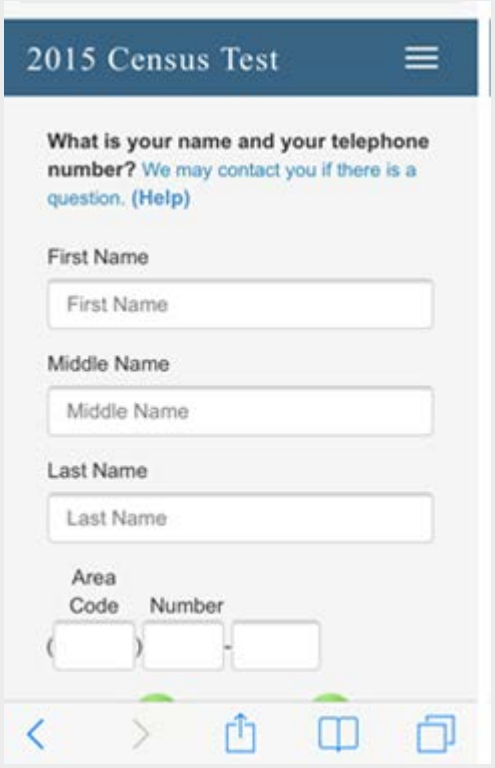
Check boxes: do's





Text Fields: do's

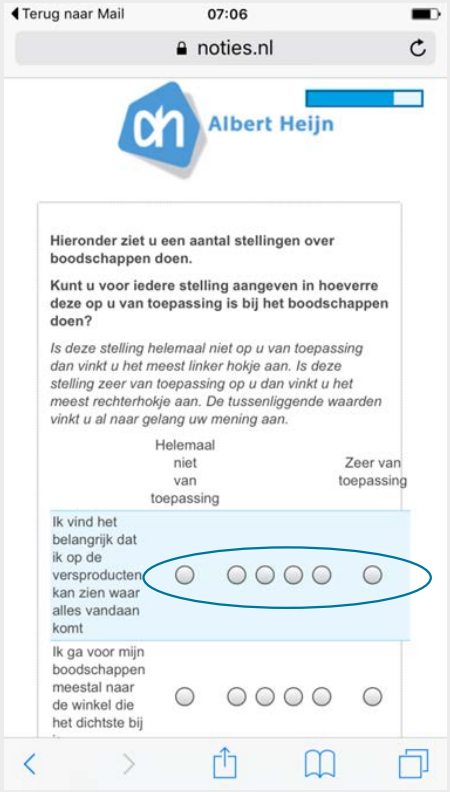
- Content comparable, although
  - Shorter
  - More abbreviations
  - More typos
  - More auto-correct errors
- Use multiple fields for multi-section answers (birth date)



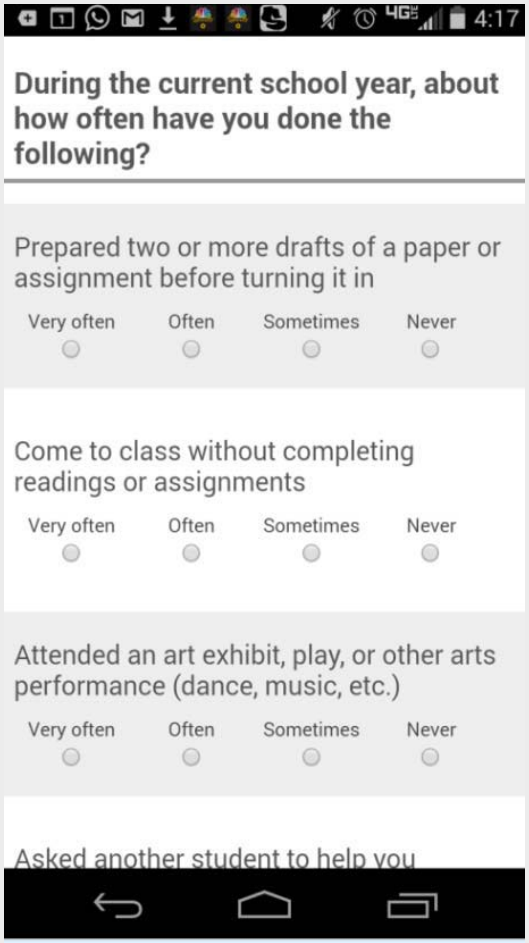
Grids: don’ts (1)

Horizontal scrolling

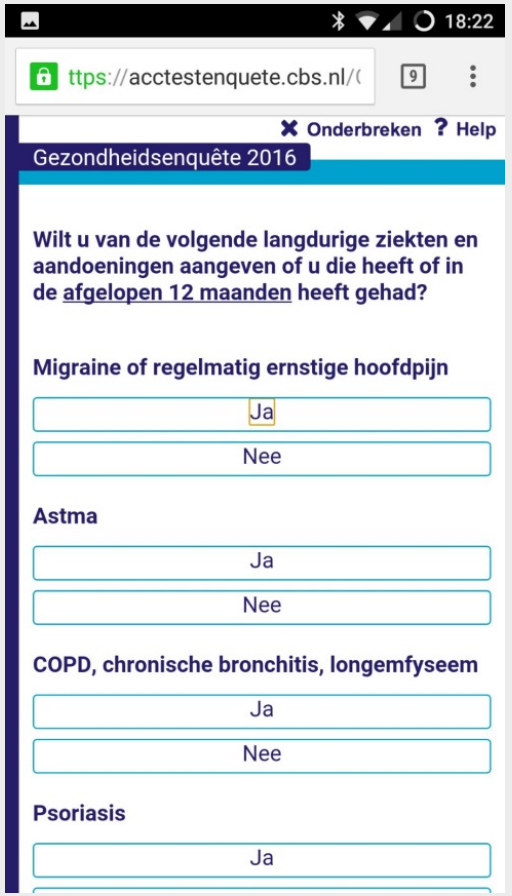
Unequal spacing



Grids: do's (2)


4:17
During the current school year, about how often have you done the following?
Prepared two or more drafts of a paper or assignment before turning it in
Very often
Often
Sometimes
Never
Come to class without completing readings or assignments
Very often
Often
Sometimes
Never
Attended an art exhibit, play, or other arts performance (dance, music, etc.)
Very often
Often
Sometimes
Never
Asked another student to help you

15.47
Bent u het eens of oneens met de volgende uitspraken?
Mijn eigen geluk hangt sterk af van het geluk van mensen om mij heen.
1 helemaal oneens
2
3
4
5
6
7 helemaal eens
Ik weet het niet
Vorige
Volgende


18:22
ttps://acctestenquete.cbs.nl/(
Onderbreken
Help
Gezondheidsenquête 2016
Wilt u van de volgende langdurige ziekten en aandoeningen aangeven of u die heeft of in de afgelopen 12 maanden heeft gehad?
Migraine of regelmatig ernstige hoofdpijn
Ja
Nee
Astma
Ja
Nee
COPD, chronische bronchitis, longemfyseem
Ja
Nee
Psoriasis
Ja

Sliders

- Avoid using sliders to collect precise values
- Sliders may produce
  - longer completion times
  - Lower quality responses
  - Different item means

Drop-down boxes

Avoid using drop-down boxes

- produces stronger primacy effects
- Higher item missing's
- More errors/mistakes
- Layout dropdown boxes vary between browsers

If you do use a drop-down box, make sure the respondent knows the name of what they want and sort the list in a logical way.

What can we do?

1. ~~Do nothing~~

2. ~~Explicitly discourage the use of a mobile device~~

3. *Make the survey mobile friendly* → *bare minimum*

4. **Optimize surveys for mobile devices**

5. *Build a specific app for mobile devices*

4. Optimizing surveys for mobile

Limited or no research available

- Number of questions on a screen (Paging vs. scrolling)
- Automated scrolling/auto forward
- Question wording (length)
- Radio buttons vs. big buttons
- Questionnaire length
- Icons instead of text
- …

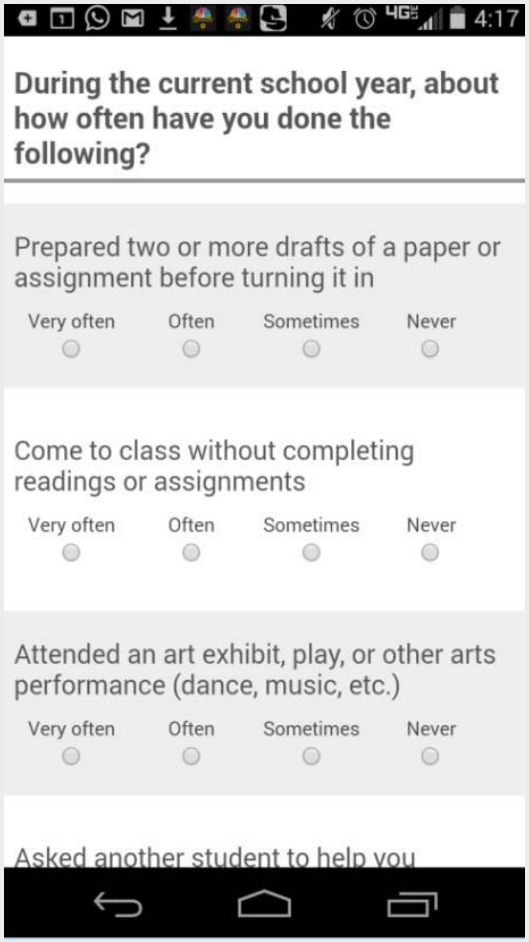
Number of questions on a screen

- Paging (1 question per screen)
  - No scrolling needed
  - Longer loading time
  - More clicking
  - Limited content effects

- Scrolling (1 screen for all questions)
  - Faster
  - Need to scroll
  - Risk of item-missings
  - More difficult with routing

Automated scrolling/auto forward

- Coulde be faster than desktop
- Need for animated movement
- Potential risks for straightlining
- It could harm data quality

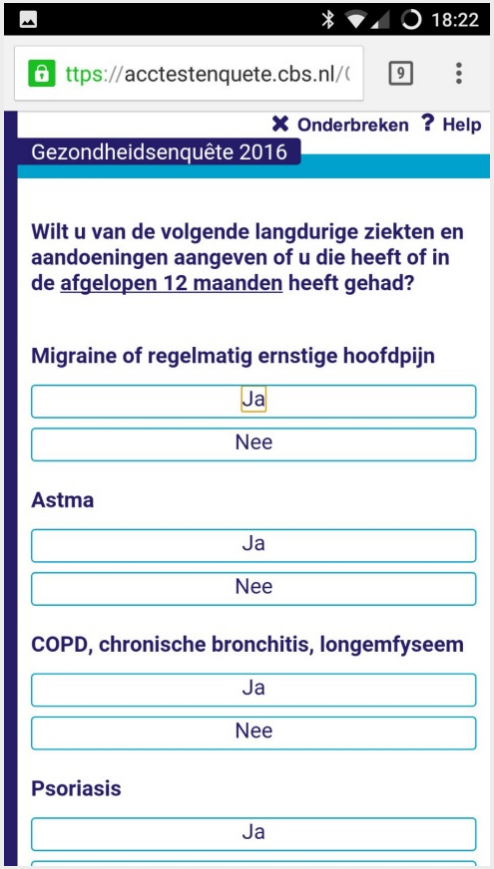


Question wording (length)

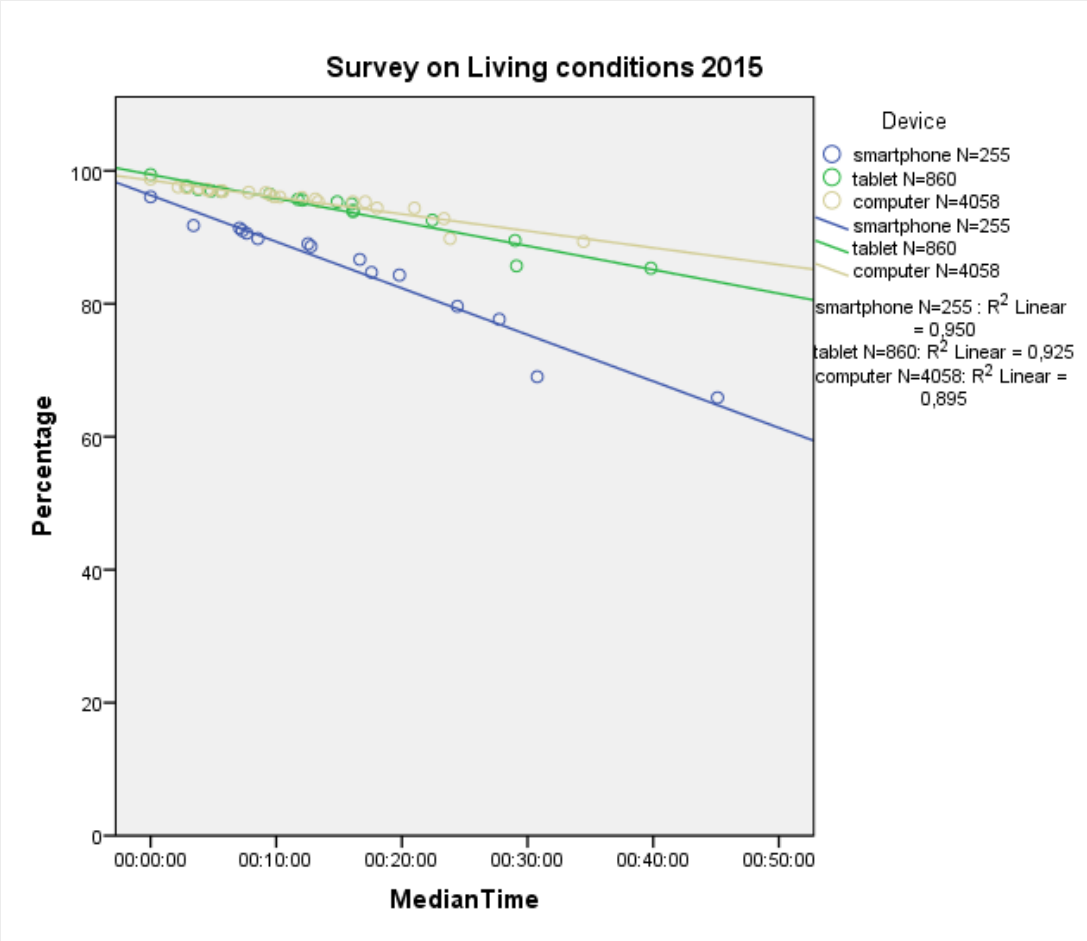
- Complicated text is about twice as hard to read on a small device (Nielsen & Budiu, 2013)
- Device effect for questions with a lot of text

- Can we shorten questions & question text without changing the question?

Radio buttons vs. big buttons



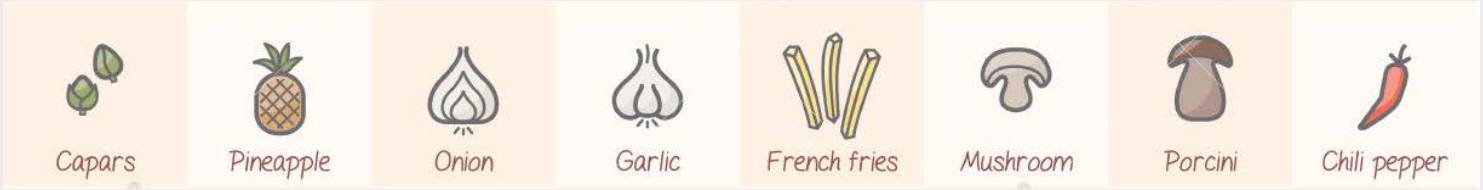
Questionnaire length



Device	Breakoff per minute
Smartphone	0.70%
Tablet	0.36%
Computer	0.25%

Icons

- Humans are better at picture recognition than reading
- Finding the perfect icon is hard
- Less errors when showing both icon and text
- A lot of continuous experimenting is needed to finetune icons!



What can we do?

~~1. Do nothing~~

~~2. Explicitly discourage the use of a mobile device~~

3. *Make the survey mobile friendly* → *bare minimum*

4. Optimize surveys for mobile devices → in progress

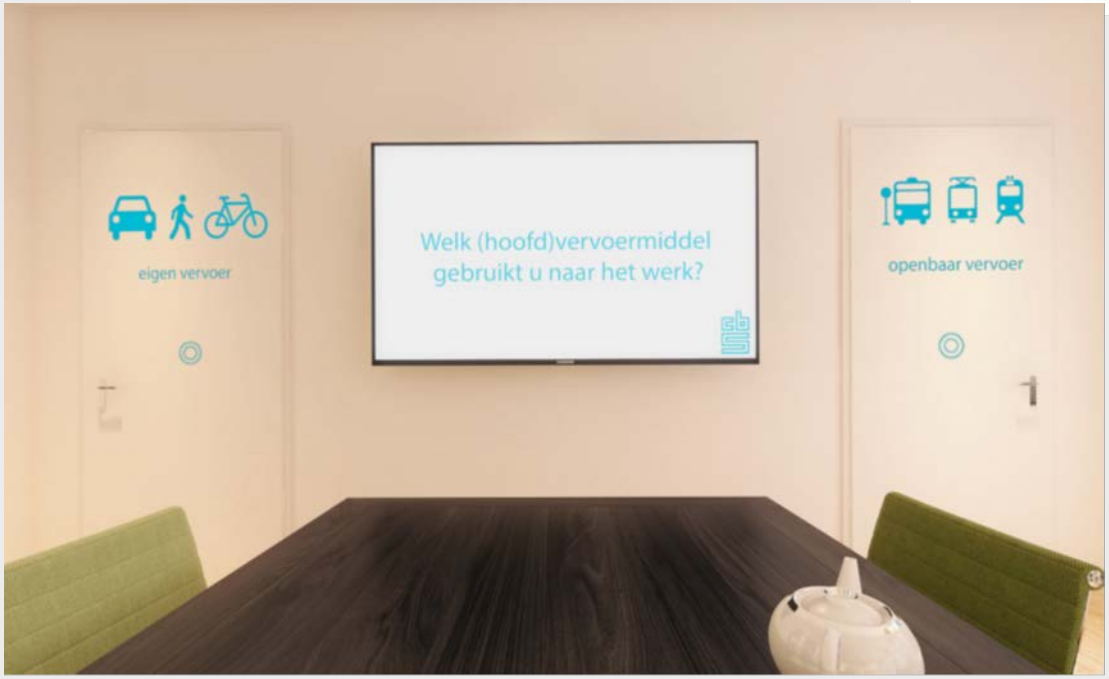
5. ***Build a specific app for mobile devices***

5. Build a specific app for mobile devices

- Use 24-7 availability
  - diary studies
  - Flash questionnaires
- Gamification
- Sensors
  - GPS
  - Health
  - Environment
  - Directly linked to you brain?
- Link to wearables
- Augmented/Virtual reality?

Hands free survey using VR

- Use cardboard box
- Speech recognition
- Eye-tracking
- www.mdb3d.nl/cbs



Conclusions

- Make a special smartphone layout
- Tablet layout can stay similar to the desktop
- The best practices are not set in stone
- Most research relies on sub-optimal samples
- If you want to be safe (minimize potential device effects), only use question types that are known to work across devices (radio buttons, check boxes and text entry boxes)

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