

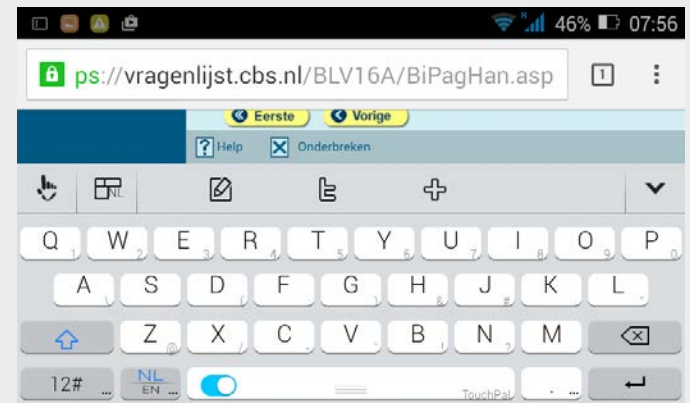
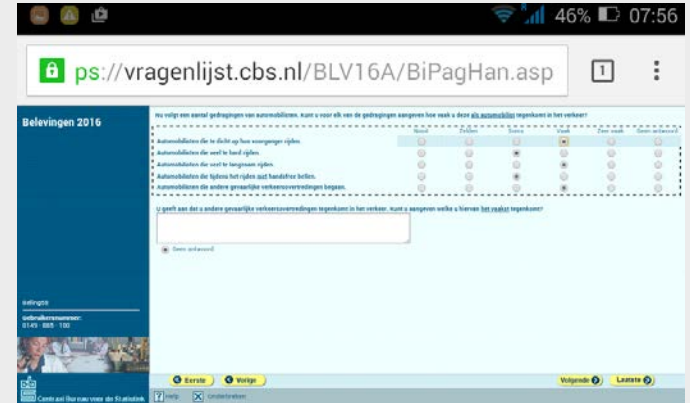
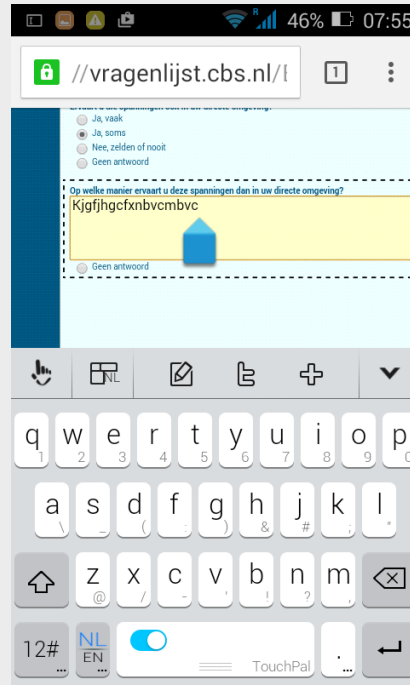
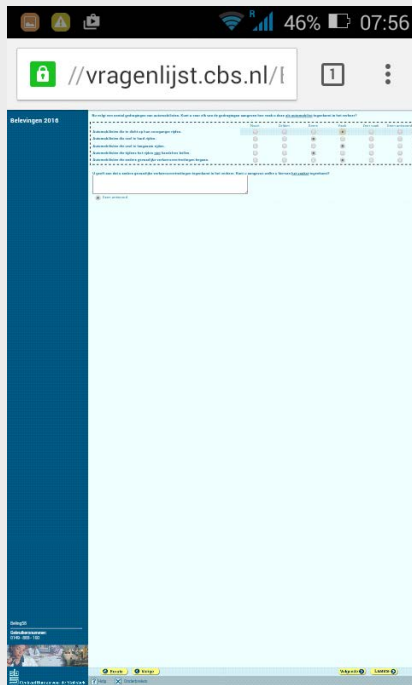


**Questionnaire design for smartphones (and tablets):
*an on-going journey from mobile unfriendly to mobile
friendly to mobile optimization***

Ole Mussmann & Jeldrik Bakker



Mobile unfriendly surveys



What can we do?

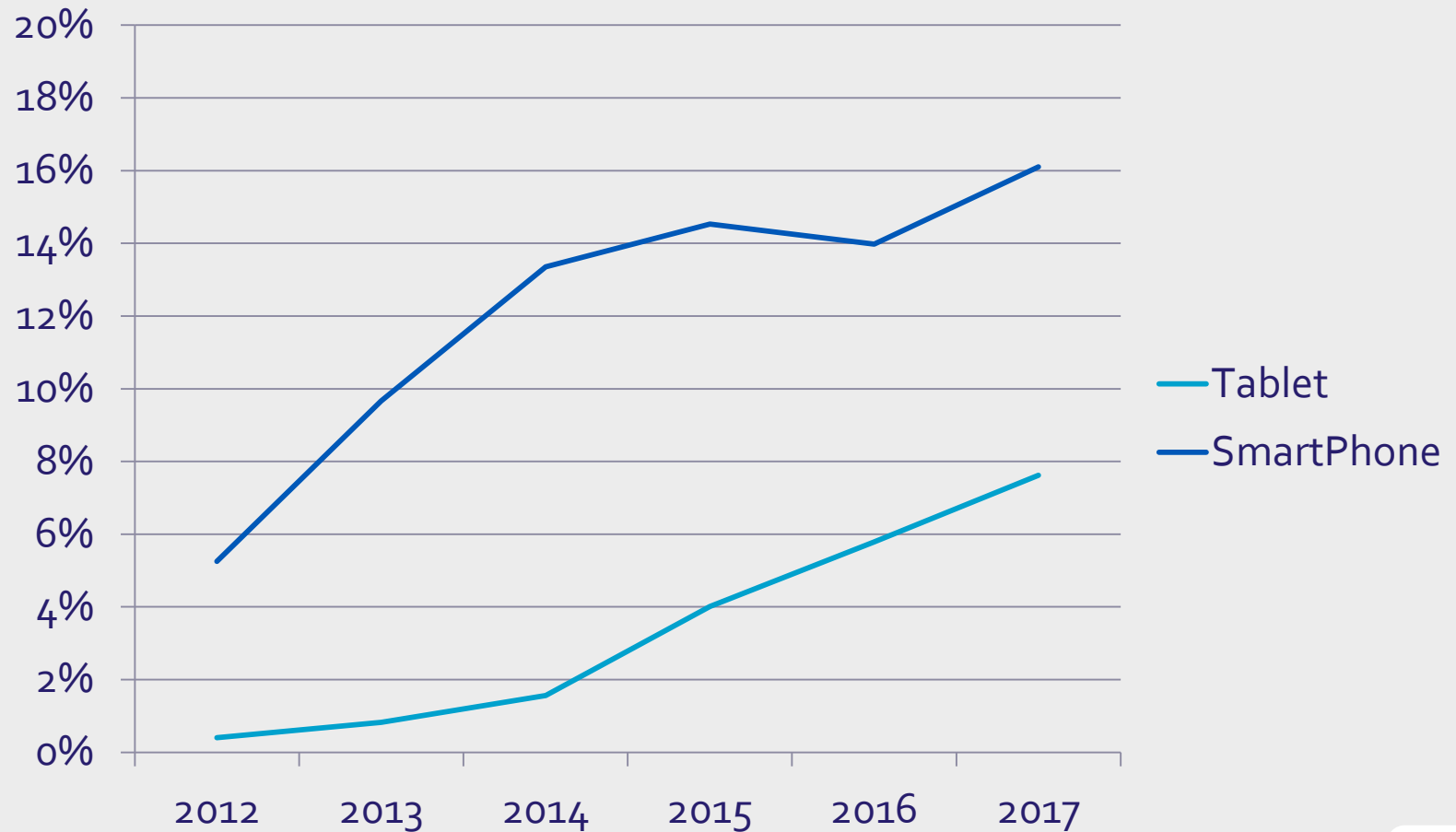
1. **Do nothing**
2. Explicitly discourage the use of a mobile device
3. Make the survey mobile friendly
4. Optimize surveys for mobile devices
5. *Build a specific app for mobile devices*



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**
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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

18:07
start.panelwizard.com

panelwizard direct

U heeft met het beantwoorden van vragen € 0,20 verdiend. Kunt u misschien aangeven waar dat bedrag naar toe moet?

Zelf/eigen spaarpotje

- Maag Lever Darm Stichting
- Plan Nederland
- VluchtelingenWerk Nederland
- CliniClowns
- Stichting Natuur & Milieu
- Stichting Jarige Job
- Stichting ChoiceforChildren
- War Child
- Rode Kruis
- Amnesty International
- Aids Fonds

18:15
coolblue.nl

zeer tevreden ✓

n.v.t.

ERVARING MET COOLBLUE.
In hoeverre bent u tevreden met:

het oriëntatieproces

« ○○○○○○○○○ »

zeer ontevreden

ontevreden

niet ontevreden / niet tevreden

tevreden

zeer tevreden

n.v.t.

ENTHOUSIASME.
Zou u ons aanbevelen bij een vriend of collega?

0 = zeer onwaarschijnlijk, 10 = zeer waarschijnlijk

23:43
flycatcherpanel.nl

FLYCATCHER Internet Research

Verder door vragen

Pagina 2 van 25

1. Verricht u momenteel betaald werk?

ja, in loondienst bij de (semi-)overheid

ja, in loondienst maar niet bij de (semi-)overheid

ja, als uitzendkracht of oproepkracht

ja, als zelfstandige

nee

« Vorige Volgende »

info@flycatcher.nl © 2015 Flycatcher Internet Research +31 (0)43 326 29 92

Check boxes: do's

🕒 📶 100% 🔋 02:57

1. Which of the following devices do you use to connect to the internet? (Check all that apply)

Enterprise digital assistant (EDA)

Personal digital assistant (PDA)

Laptop computer

Desktop computer

Computer tablet

Smart phone

Other (please specify)

2. Which of the following devices do you most prefer to use to connect to the internet?

2015 Census Test

What is John B Doe's race or origin?
Select one or more boxes. (Help)

White
For example, German, Irish, English, Italian, Lebanese, Egyptian, and so on.

Hispanic, Latino, or Spanish origin
For example, Mexican or Mexican American, Puerto Rican, Cuban, Dominican, Salvadoran, Colombian, and so on.

Black or African Am.
For example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Ghanaian, and so on.

Asian
For example, Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, and so on.

American Indian or Alaska Native

< > 📄 📄 📄

📷 🕒 📶 🔋 15.50

Bent u op dit moment... ?

Meerdere antwoorden mogelijk

alleen, of met onbekenden

met partner, vriend/vriendin

kinderen

andere familieleden

collega's, klasgenoten

cliënten, klanten

vrienden

andere mensen die u kent

⏪ Vorige Volgende ⏩

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)

2015 Census Test

What is your name and your telephone number? We may contact you if there is a question. (Help)

First Name
First Name

Middle Name
Middle Name

Last Name
Last Name

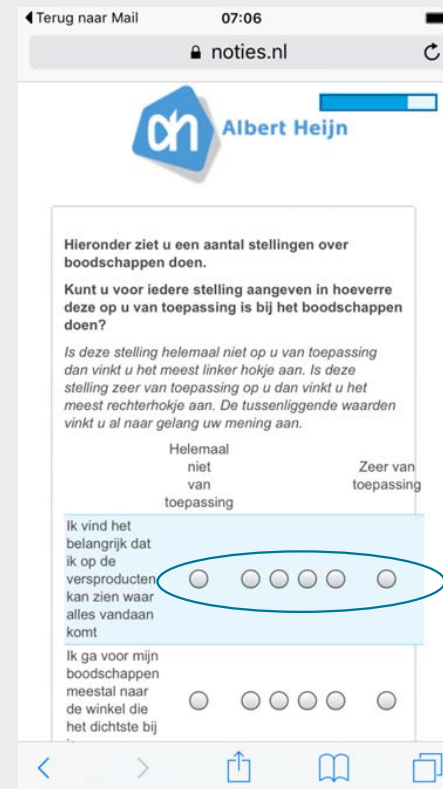
Area Code Number
() -

< > [Share] [Bookmarks] [Tabs]

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

18:22

<https://acctestenquête.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

Astma

COPD, chronische bronchitis, longemfyseem

Psoriasis

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

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

The screenshot shows a mobile survey interface with a status bar at the top displaying various icons and the time 4:17. The survey consists of three questions, each with four radio button options: Very often, Often, Sometimes, and Never.

Question 1: "During the current school year, about how often have you done the following?"

Question 2: "Prepared two or more drafts of a paper or assignment before turning it in"

Question 3: "Come to class without completing readings or assignments"

Question 4: "Attended an art exhibit, play, or other arts performance (dance, music, etc.)"

Question 5: "Asked another student to help you"

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

18:22
https://acctestenquête.cbs.nl/

Onderbreken ? Help
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- War Child
- Rode Kruis
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- Aids Fonds

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zeer tevreden ✓

n.v.t. ○

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zeer ontevreden ○

ontevreden ○

niet ontevreden / niet tevreden ○

tevreden ○

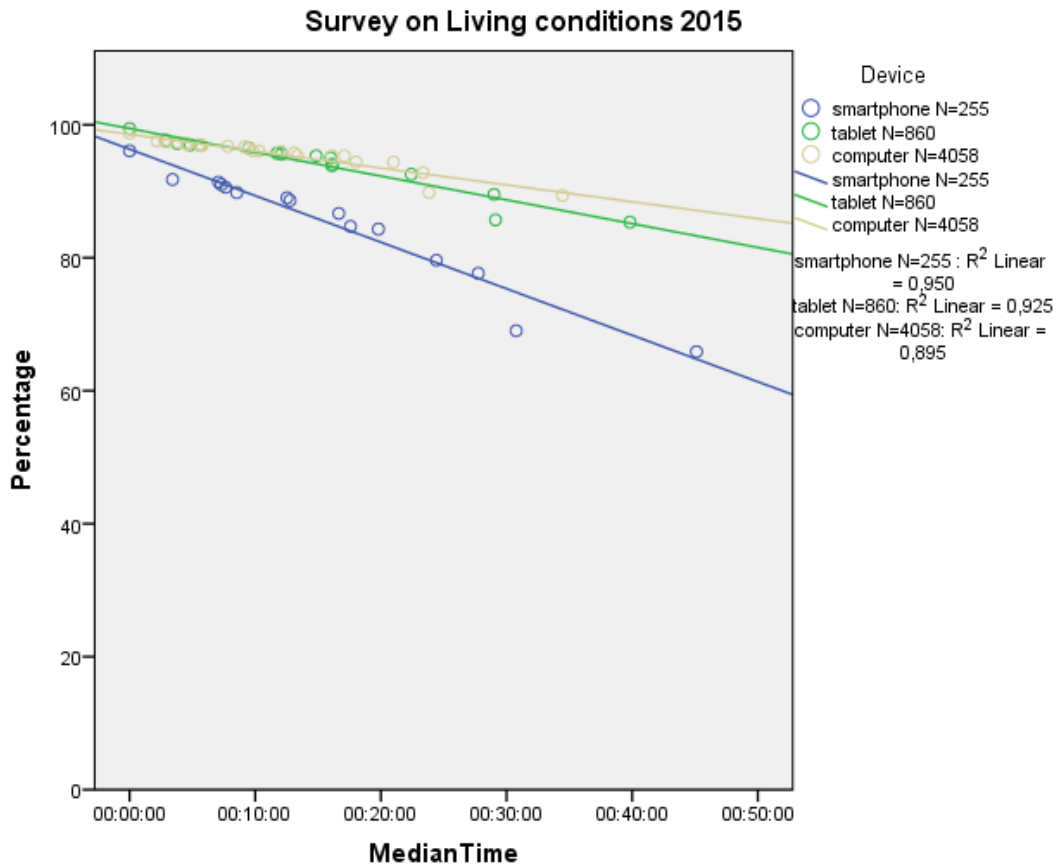
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n.v.t. ○

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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)

j.bakker@cbs.nl