The effect of respondent characteristics on break-off in online surveys;
A comparison between respondents using smartphones, tablets and pc

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project number

Mini paper non-response workshop August 30 Utrecht
CBS - DVZ (Data collection)
03-08-2017

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1. Summary

In web surveys among the general Dutch population, about 5% of all respondents uses a smartphone and more than 17% uses a tablet to fill in the questions. Especially people with a foreign background between 30 and 39 years old fill in the survey using their smartphone (19.5%). People of 60 years or older hardly ever choose a smartphone (0.6%). Tablet users are more often females with a high family income (24.1%), while students seldom respond on a tablet (5.1%).

Especially on smartphones, many people do not complete the survey: 32.1% compared to 12.1% on tablet and 9.6% on pc (percentage of total number of unique logins). Especially younger people and people with a non-western foreign background fail to complete the questionnaire, independent of the device they use.

In conclusion the percentage of break-offs is not only high on smartphones but this mainly concerns younger people and people with a foreign background. Because these people are generally harder to reach, this stresses the importance of smartphone break-off in online surveys even more.

2. Introduction

For all computer assisted web interviews Statistics Netherlands registers the device type on which people open and fill in the questionnaire. More information and analyses of devices is important to gain more insight in:

- the importance of responsive survey designs and the user friendliness of current designs;
- the response (and non-response) per target group;
- to what extent we can reach people when using specific mobile applications to gather data (like gps).

For these purposes we analysed data of surveys among the general Dutch population that took place between January and April 2017 (6 surveys; > 15,000 responses). Surveys among specific target groups or with an uncommon data collection strategy were excluded from analyses.

3. Results

3.1 Use of different devices

In the general Dutch population 5.1% chooses to fill in the survey on a smartphone and 16.7% on a tablet. Almost all other people fill in the survey on a pc. Other devices, like gaming devices, smart TV's or iPods, are hardly ever used. This category was therefore excluded for further analysis.

3.2 Break-offs per device

Break-offs are defined as the number of non-complete responses divided by the total number of unique logins on the specific device.
People who use a smartphone to login, are more likely to break-off than people who use a tablet or pc. Also on tablets this percentage is significantly higher than on pc (but lower than on smartphone).

Table 1: break-offs per device type

Discontinued responses:	**Phone**	**Tablet**	**Computer**
n=	1184	2972	13512
	32.1%	12.1%	9.6%
		Chi-square	553.7
		P	<0.001

Pairwise comparisons:	**(A)**	**(B)**	**(C)**
	BC	C	

3.3 Time to complete per device

The average time to complete the survey on tablets and smartphones is respectively more than 3 and 4 minutes higher than on pc. Per survey we see the same picture. Interestingly this difference is not visible in our survey on consumer confidence, where the survey design was adjusted for smartphone and tablet respondents. Although based on only 1 survey, this indicates that an adjusted design will decrease response time and break-offs on mobile devices.

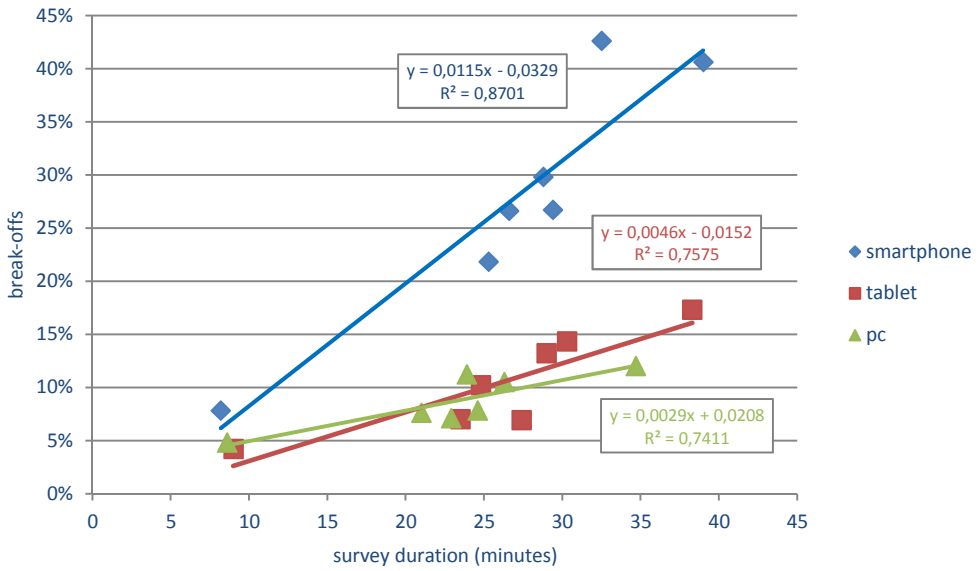
Table 2: Time to complete the survey per device type

Time to complete in minutes:	**Phone**	**Tablet**	**Computer**
n=	804	2611	12215
	30.2	29.4	26.1
		F-value	47.8
		P	<0.001

Pairwise comparisons	**(A)**	**(B)**	**(C)**
	C	C	

In figure 1 the percentage break-offs is plotted against the average time to complete per survey per device. The graph shows that the percentage break-offs increases with the survey duration. This increase is slightly higher on tablets than on pc. The strongest increase, however, is visible at smartphones: the percentage break-offs varies from less than 10% in the shortest surveys to more than 40% in the longest surveys.

Figure 1: Break-offs plotted against the average survey duration per device



3.4 Characteristics respondents per device

Figure 2 and 3 show the combined respondent characteristics per device, based on a CHAID analysis. Especially younger people, aged 18-39, respond on their smartphone. Within this group we see a relatively high percentage of people with a foreign background: 19.5% of the people with a foreign background, aged 30-39, respond on a smartphone. People of 60 years and older hardly ever fill in the survey on a smartphone (0.6%).
Tablets are mainly used by working women with a far above average family income (24.1%). Students hardly ever fill in a survey on a tablet, especially male students (3.4%).

Figure 2: smartphone respondents

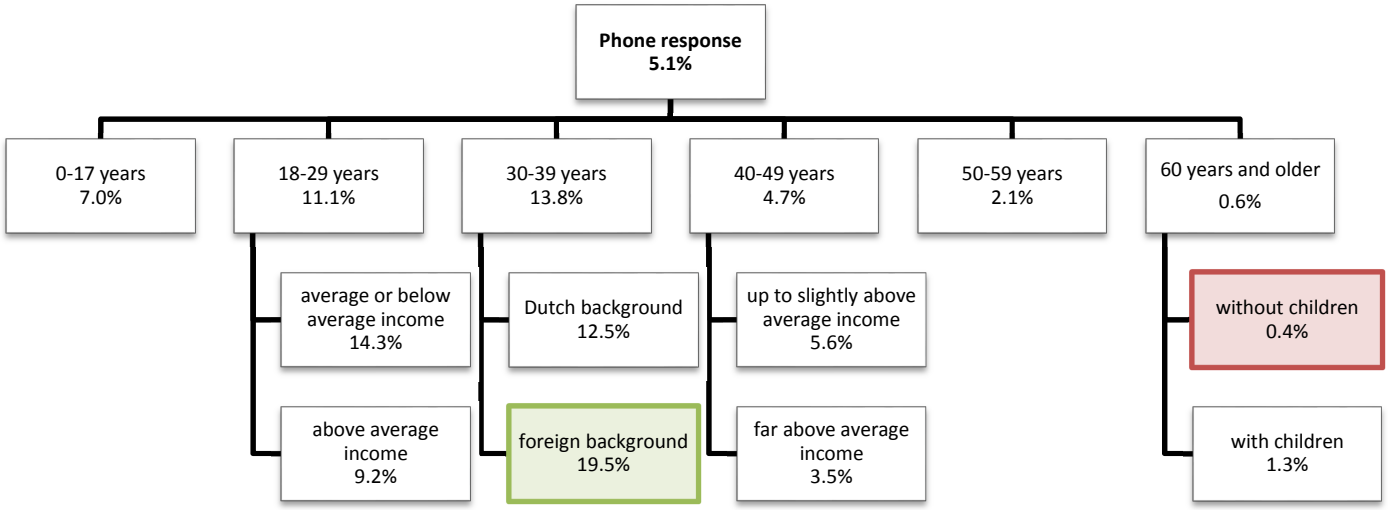
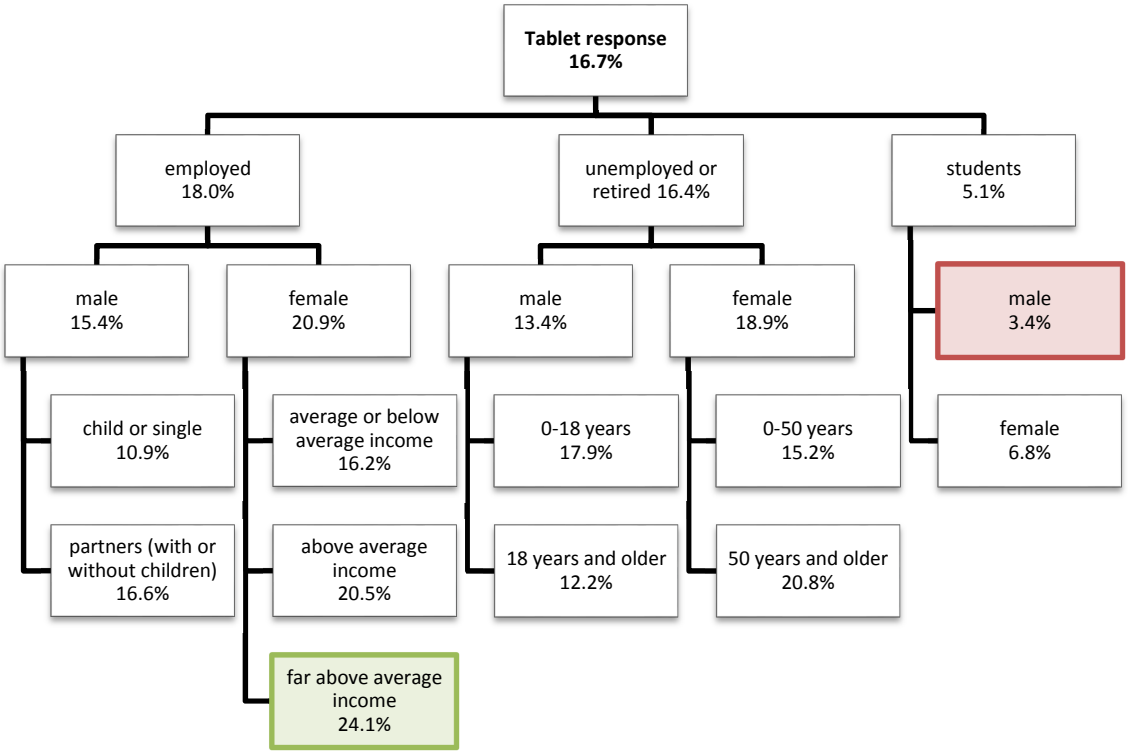


Figure 3: tablet respondents



3.5 Characteristics break-offs per device

Figure 4 and 5 show the combined characteristics of the break-offs per device.

On pc as well as on smartphone we see that break-offs are relatively often people with a non-western foreign background and younger people. On tablets there are no significant differences per characteristic. This is mainly due to the low number of respondents/break-offs on tablet. Cross tabulations also show that people with a non-western foreign background and younger people relatively often fail to complete the survey when using a tablet.

Figure 4: characteristics pc break-offs

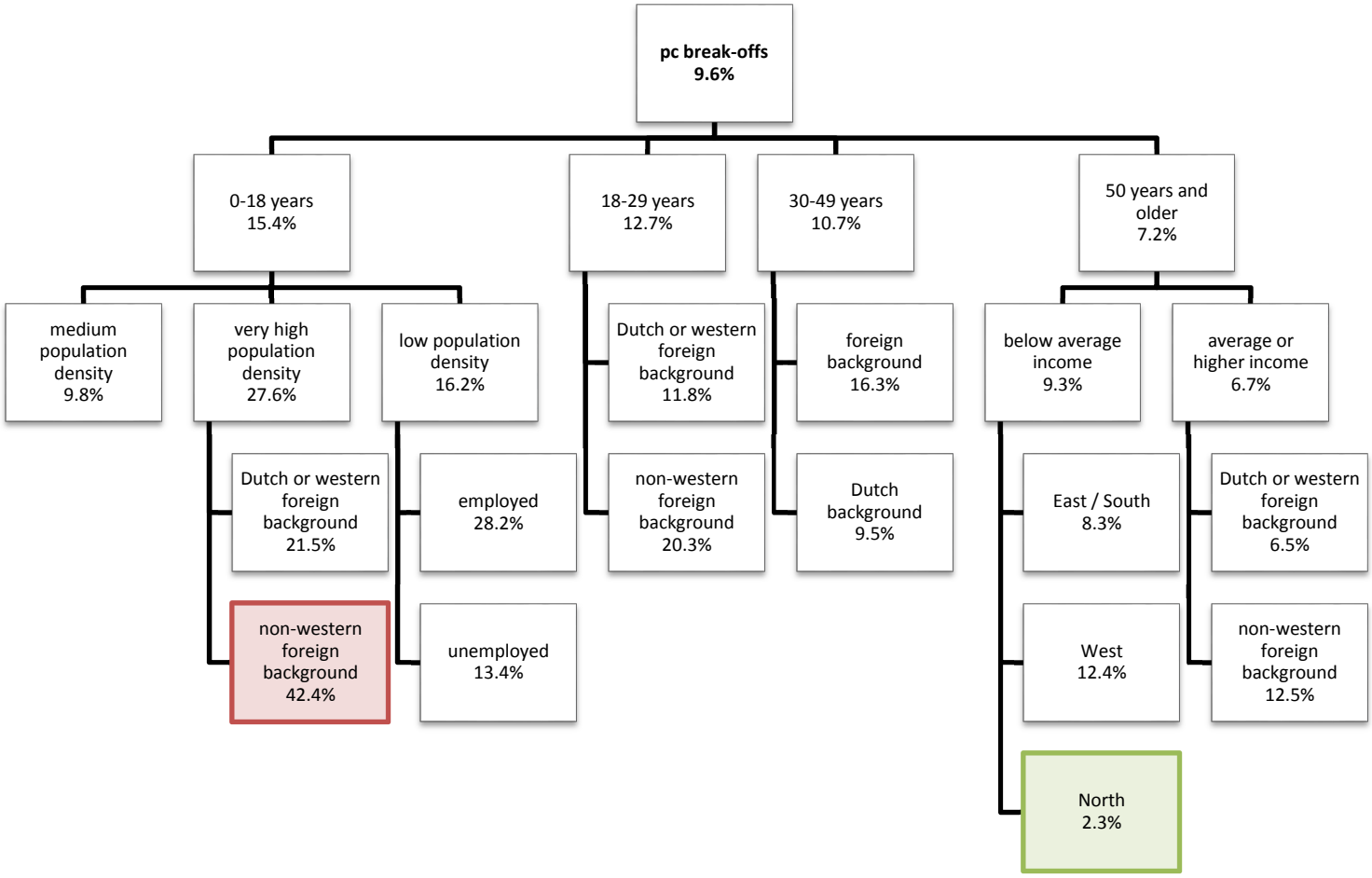


Figure 5: characteristics smartphone break-offs