

MOBILE RESPONDENTS AND SURVEY RESULTS

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INTRODUCTION

An ever increasing number of people worldwide use mobile devices (smartphones and tablets) for a multitude of daily activities. It is therefore a natural extension that people / respondents also turn to these devices to complete questionnaires. Given this reality, researchers have responded by designing and offering mobile friendly questionnaires.

The question of mobile friendly questionnaires was first discussed by Kristin Luck at the conference in Nice (Luck, 2013), who presented the findings regarding online / mobile questionnaires, based on analyses of questionnaires on general topics and not specifically for readership research.

For traditional readership surveys, becoming mobile friendly is a difficult task. The key aim of such surveys is to measure all relevant titles in a market, which often results in lengthy questionnaires. Methods have been developed to cope with this element of length in efficient ways, in order to assure high quality measurement while managing respondent burden. Those methods – e.g. using visuals, showing similar titles next to each other on one screen, using grids for efficiency – often are in conflict with the rules of thumb established and employed to make questionnaires mobile friendly (i.e. keep it short, avoid grids etc.).

While traditional readership surveys were not developed with a mobile culture in mind, we see that respondents are more and more interested in completing these surveys on mobile devices if given the opportunity. There are important questions that arise from this reality, namely:

- Are there differences between the data filled in on the desktop / laptop, tablet and smartphone?
- If so, what are the potential drivers of the differences? Is it the type of respondents (profile) choosing to use specific devices that introduce the differences, is it the devices themselves, or are there other factors at play?

In this paper we analysed data from the markets in the US (Starch) and The Netherlands (NOM Print Monitor). In the Netherlands 27% of the respondents fill in the readership survey NOM Print Monitor on a mobile device (i.e. smartphone or tablet); in The US Starch survey this is even higher (41%). By comparing the findings from both surveys, it is possible to find out whether there are similar pattern seen across the markets or not.

IMPACT OF DIFFERENT DEVICES ON SURVEY RESULTS IN THE US

GfK MRI in the US has been consistently running online surveys for various studies since 2006. Both the Issue Specific and the Starch studies are conducted exclusively using online surveys. For the purpose of this paper, we extracted Starch data from 2010 onward to review what devices our respondents used to complete their survey. Additionally, we explored these respondents' demographics and responses to the key Starch metric and average time spent participating in the survey.

Starch is a print ad effectiveness database that gathers information using online surveys. The core Starch metric is ad noting – noting signifying whether respondents remembered seeing specific ads in specific issues of magazines.

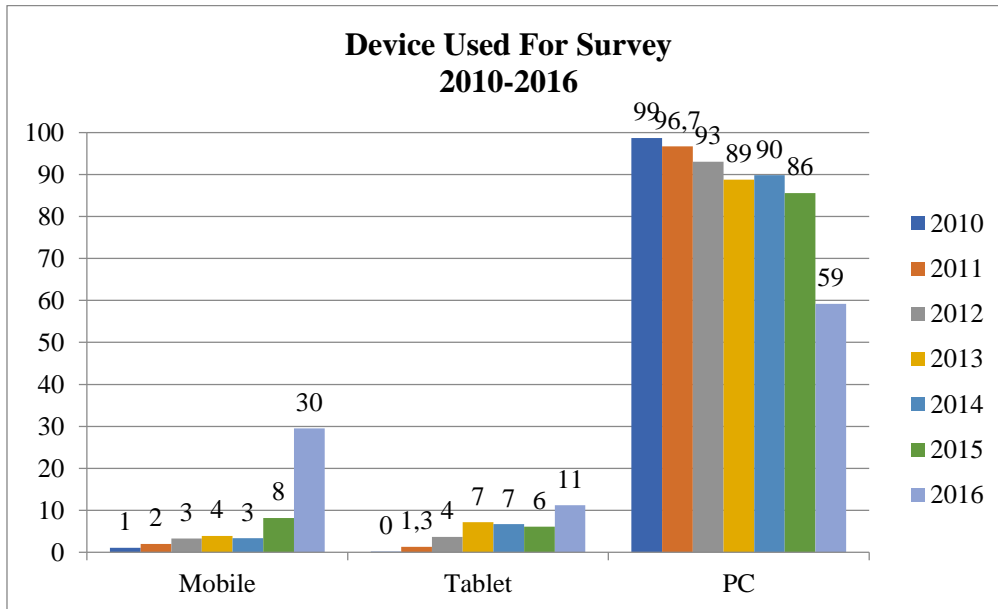
Percent of Respondents Completing Survey By Device Type

On average, Starch executes more than 2000 surveys in a given year and more than 400K respondents participate in those surveys. Around 2010 we built in the capability of capturing the type of device used to complete a survey.

Figure 1 is depicting what devices were used by respondents to participate in our survey year over year – pc, tablet or mobile. A few trends are clear:

- Respondents’ use of PCs to participate in our surveys has declined, with the biggest decrease occurring between 2015 and 2016.
- There has been some increase in the use of tablet devices to participate in our surveys.
- The biggest shift in device usage has been from PCs to smartphones.

Graph 1. Development of device used for survey (US)

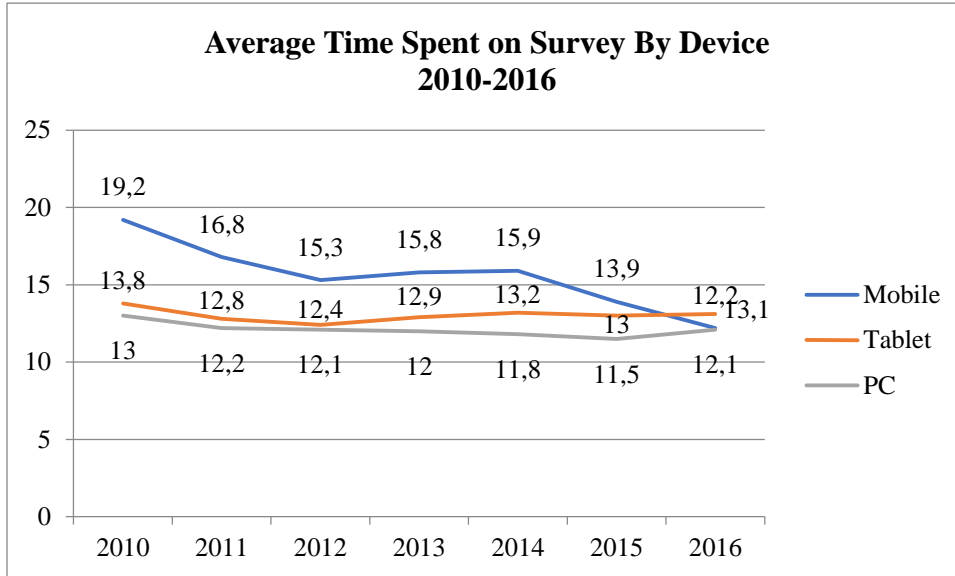


Given the shifts primarily in PC and smartphone usage, this discussion will be focused on those two device types in particular.

Average Time Spent on Survey By Device

Delving deeper, we can evaluate other metrics associated with survey participation. Below is a graph depicting average time spent with the Starch survey by device type. Interestingly, respondents opting to use smartphones around 2010 spent much more time (approximately 19 minutes) completing the survey versus around 12 minutes more recently in 2016. In all, the time spent with the survey by respondents using PC and also tablets has held pretty steady. We can hypothesize about different reasons that may have led respondents to spend more time on smartphones including technical (i.e. speed of survey/image download, etc.), participation related (i.e. experience with mobile device for different activities such as survey taking) or simply the types of people who opted to use smartphones for the survey early on. More recently what we see in the data is that respondents, irrespective of device, are spending about the same amount of time, on average, with our survey.

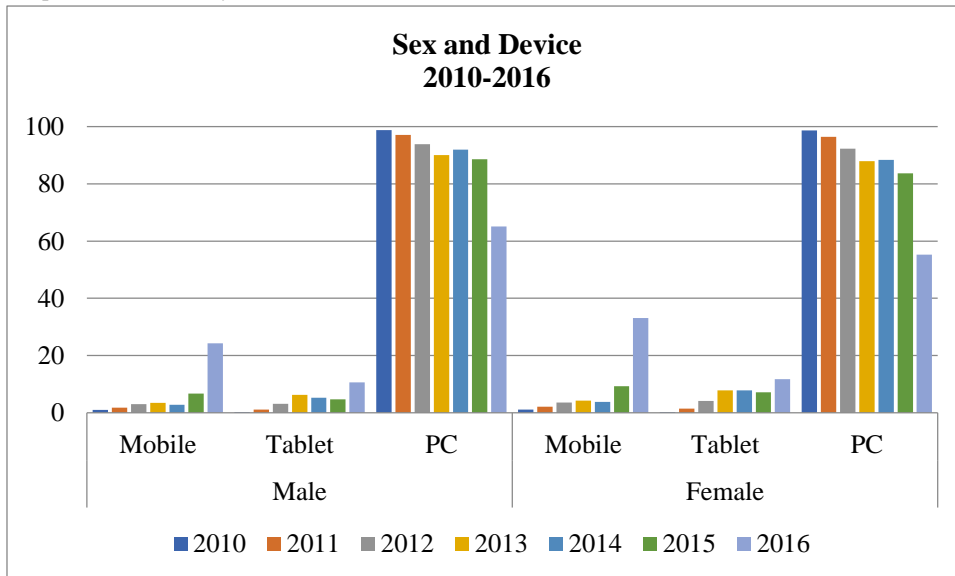
Graph 2. Time spent on survey by device



Demographic Composition of Respondents By Device Group

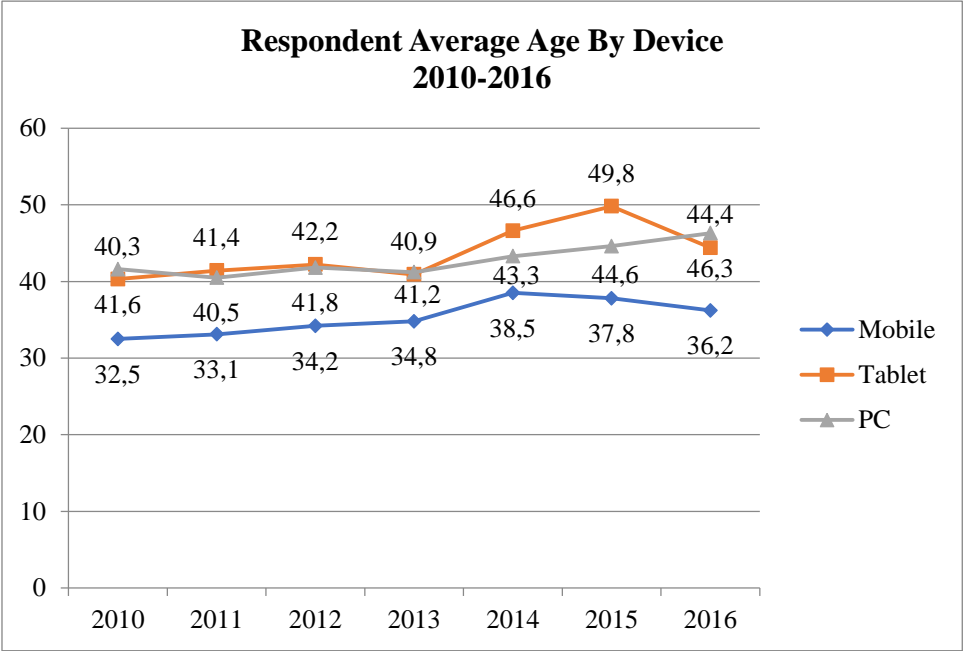
Looking at the profile of respondents by device we see the pattern by men and women across time is the same – as graph 3 shows, more male and female respondents have opted to use mobile devices to take their surveys across the time period of review.

Graph 3. Device use by sex



Unlike sex, age seems to be more of a driver to device selection for survey participation. As we would expect, on average, respondents who choose to take the Starch survey on a smartphone tend to be consistently younger than respondents taking the survey on a PC or tablet.

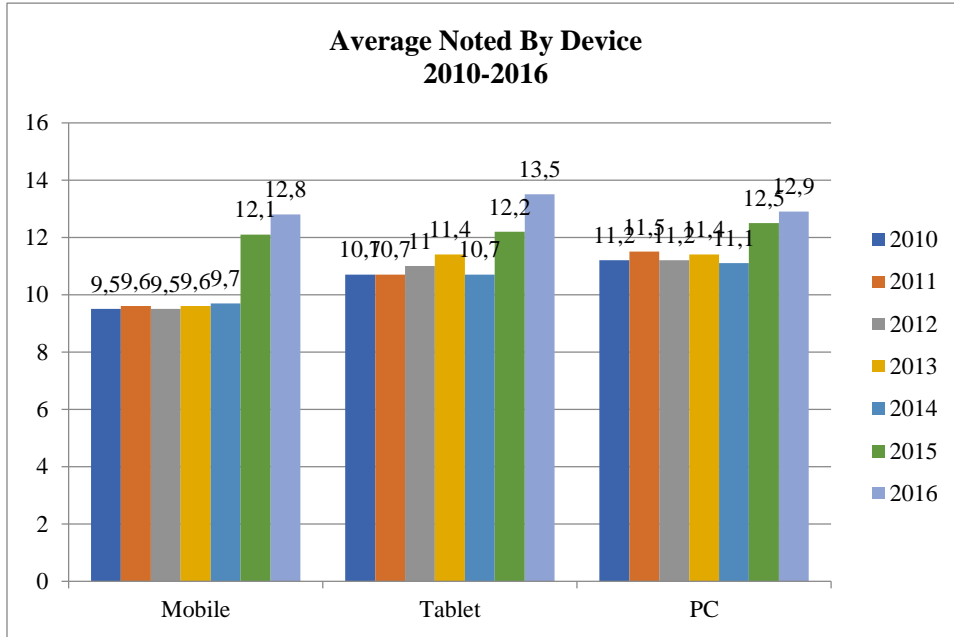
Graph 4. Device use by age



Type of Readers and Starch Noted By Device Group

While it is useful to track the growth of mobile device usage for participation with the Starch survey and to understand elements like time spent with the survey on different devices, ultimately the key question is whether a respondent’s selection of a survey device somehow impacts the resulting data we collect. To explore this relationship we ran an analysis looking at the average number of ads noted by the device used to take the survey. The graph below shows that, for the most part up until 2014, surveys completed on the PC produce average noting scores a bit higher than surveys completed on a smartphone. For example, in 2010 respondents who took a Starch survey on a smartphone noted, on average, 9.5 ads versus those who took the survey on a PC, on average, noted 11.2 ads. More recently, this relationship all but diminishes – in 2016 we see that those taking a survey on a smartphone note, on average, 12.8 ads versus those taking a survey on a PC note, on average, 12.9 ads. Again, we can hypothesize possible reasons for these results as we did earlier in this discussion – respondents becoming more used to performing more activities, including survey taking, on smartphones, mobile devices themselves changing and facilitating different tasks more efficiently, the expansion of the types of people (and in our case specifically magazine readers) who start using smartphones to take our surveys, etc.

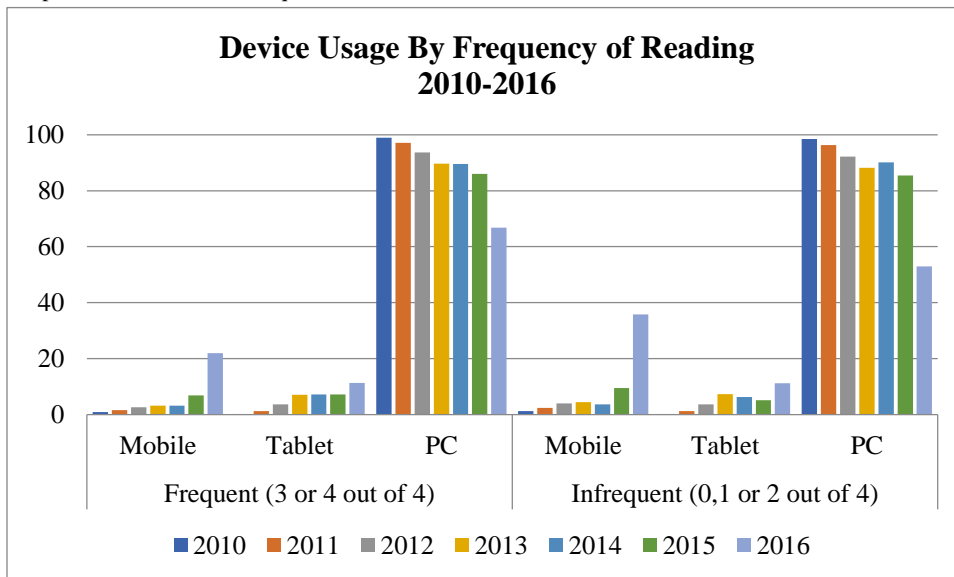
Graph 5. Key metric per device



As early Starch explorations demonstrated, demographics have not tended to be predictive of ad noting. Rather metrics associated with the reader type – frequency of readership and time spent reading – have exhibited a closer connection to the tendency to recall ads in the magazine. These variables, in fact, are used to align the Starch data to the GfK MRI National Study. We took a look at these variables by survey device as another comparison point.

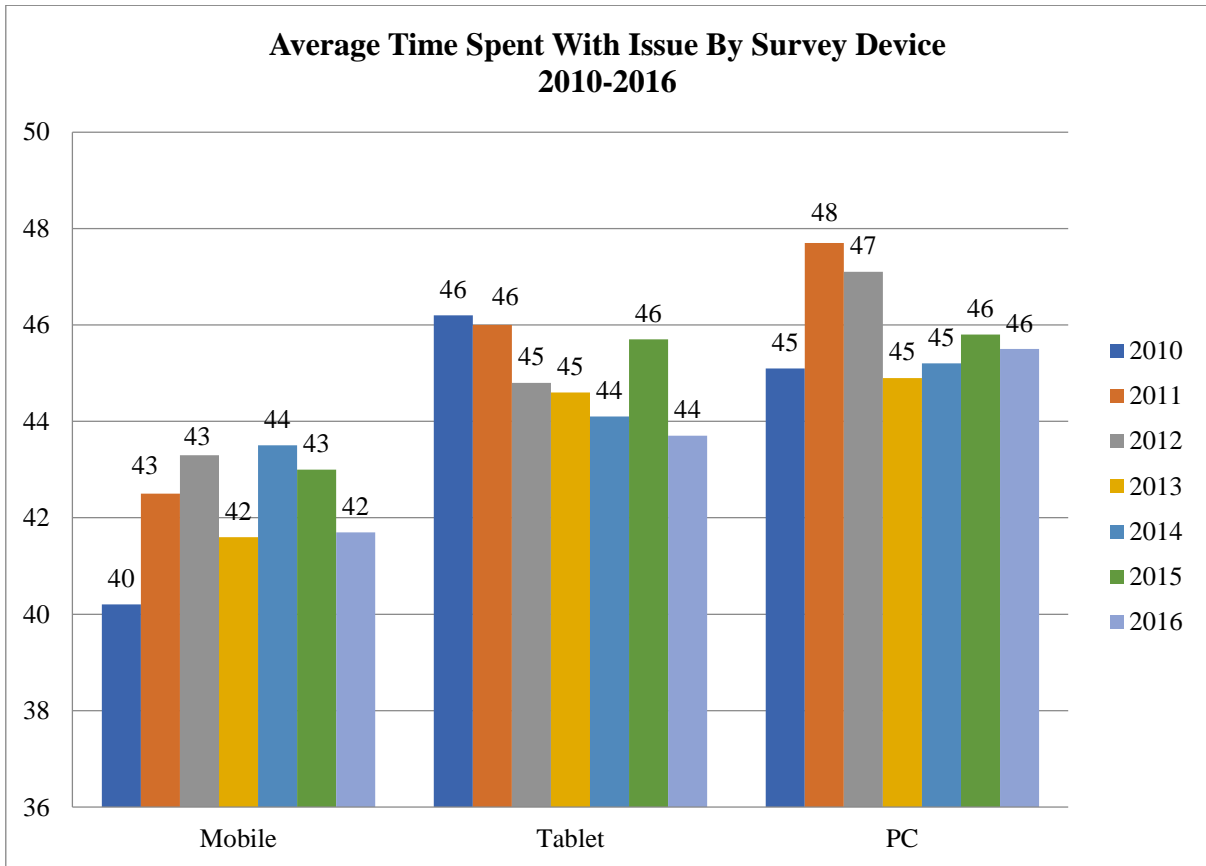
In graph 6 we have plotted device usage by frequent readers versus infrequent readers across time. What can be seen is that the growth of mobile survey usage has been realized both by frequent and infrequent readers in particular between 2015 and 2016. This growth has been offset by a decline in respondents’ use of PCs. The pattern mirrors the trend depicted in graphs above. In other words, the choice of device is not related to a specific type of reader.

Graph 6. Device us of in/frequent readers



While earlier we discussed average time spent with the survey as a metric of comparison, graph 7 below depicts another time based question, this one asked within the Starch survey – average time spent reading the magazine issue – against the device used to take the survey. Overall, what we see is that respondents who opt to take the Starch survey on a mobile device do, on average, spend less time reading magazine issues.

Graph 7. Time spent reading by device



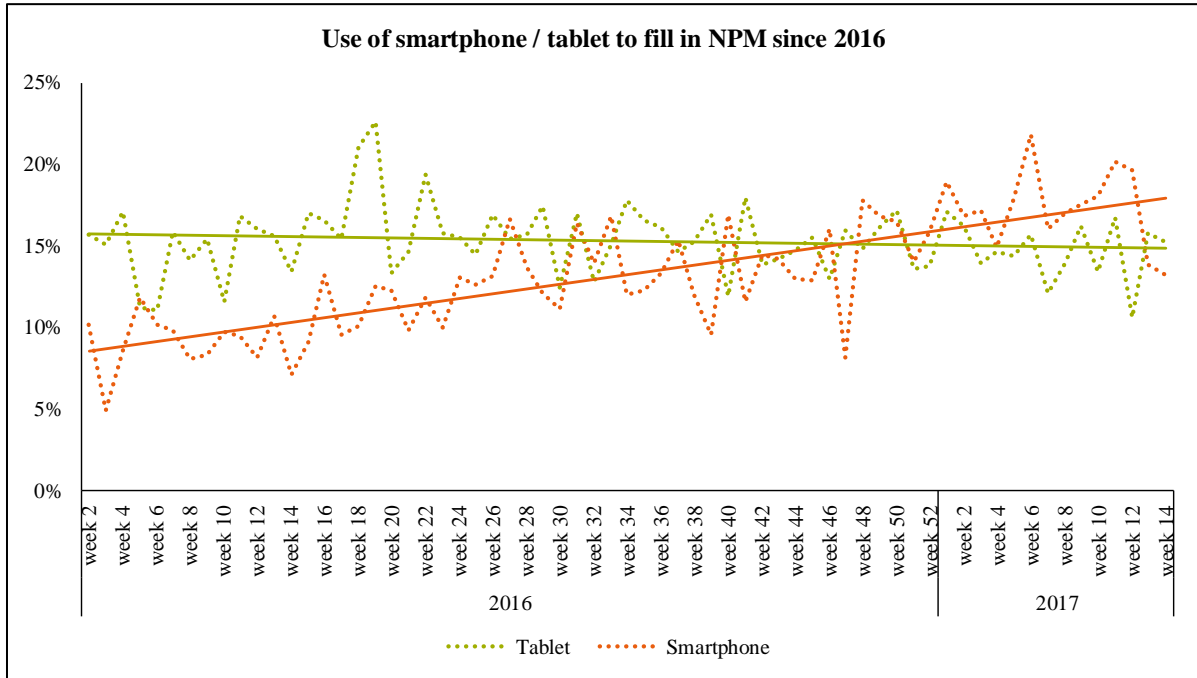
Summary of the American findings

This analysis allows us to explore whether different types of readers are more likely to take the Starch survey on different devices and if those differences in types of readers end up influencing the Starch results overall. What we have realized is that more respondents are clearly opting to take our surveys using mobile devices. Through the proliferation of these devices into our everyday tasks, through the routinization of tasks (i.e. survey participation) on mobile devices and through our standard modelling procedures the data that we produce, any changes to patterns in our database that users encounter are not driven by this change in survey platform choice.

IMPACT OF DEVICE CHOICE ON DUTCH READERSHIP RESULTS

The analysis of the NOM Print Monitor, the Dutch national readership survey, can be made starting in 2016, when the information about the device that respondents used to fill in the questionnaire was recorded. 27% of the respondents (n = 17,000 respondents per year) use a mobile device to fill in the questionnaire. 14% uses a tablet and 13% a smartphone. The penetration of smartphones is increasing rapidly: in the beginning of 2017 it was even higher than that of tablet (see graph 8).

Graph 8: Development of device used for survey (NL)



The NPM survey was never designed to be filled in on a mobile device. There is a lot of visual material and grids used in the questionnaire of NPM – readership is measured with Specific Issue Readership questions, which means that the last 6 or 4 covers of magazines are shown to the respondents. The questionnaire software is responsive, i.e. it detects screen size and adapts the questionnaire to an optimal fit. However, as is shown in figure 2, there are limits to what will fit on a screen, even if respondents – automatically or after being instructed – turn the screen from upright to horizontal. Theoretically, the questionnaire with a lot of visual material should not be suitable for mobile questionnaires.

Figure 1: Example of Specific Issue Readership question from NPM on a desktop / laptop

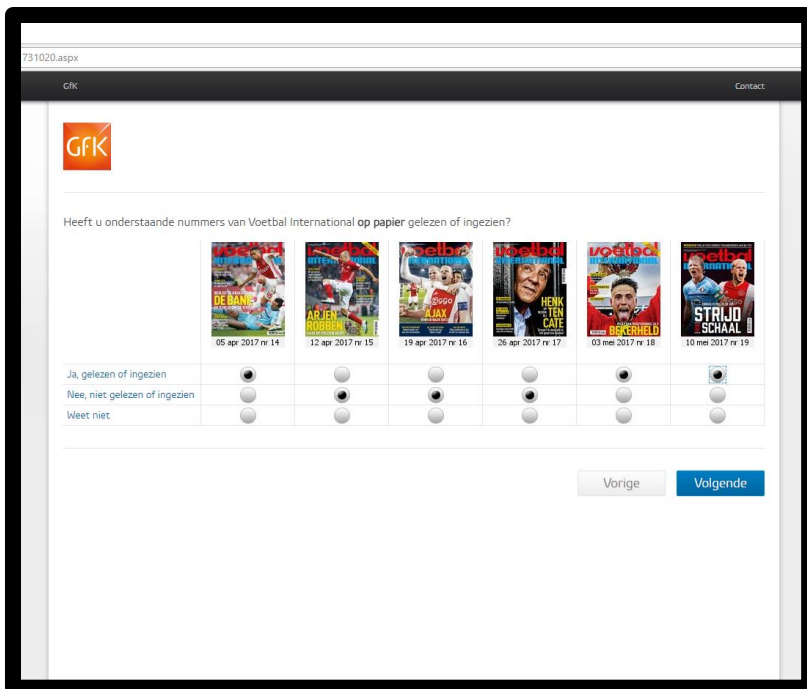
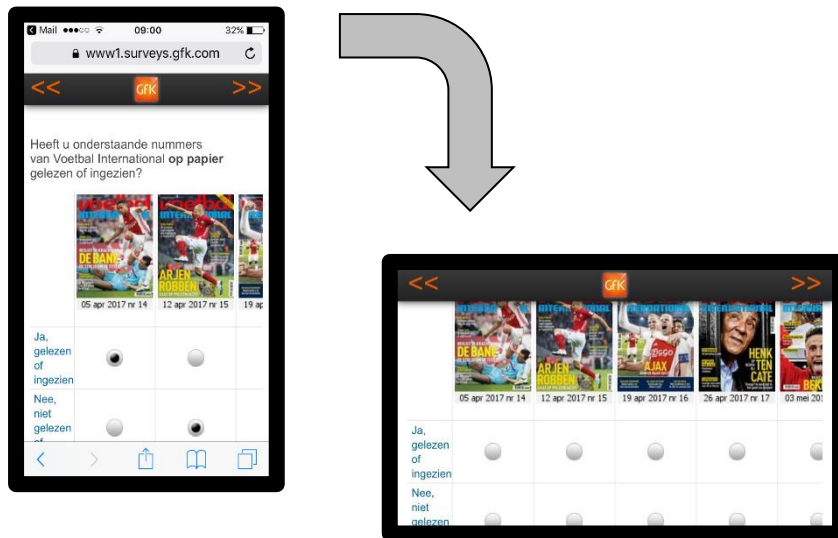


Figure 2. Example of Specific Issue Readership question from NPM on a smartphone



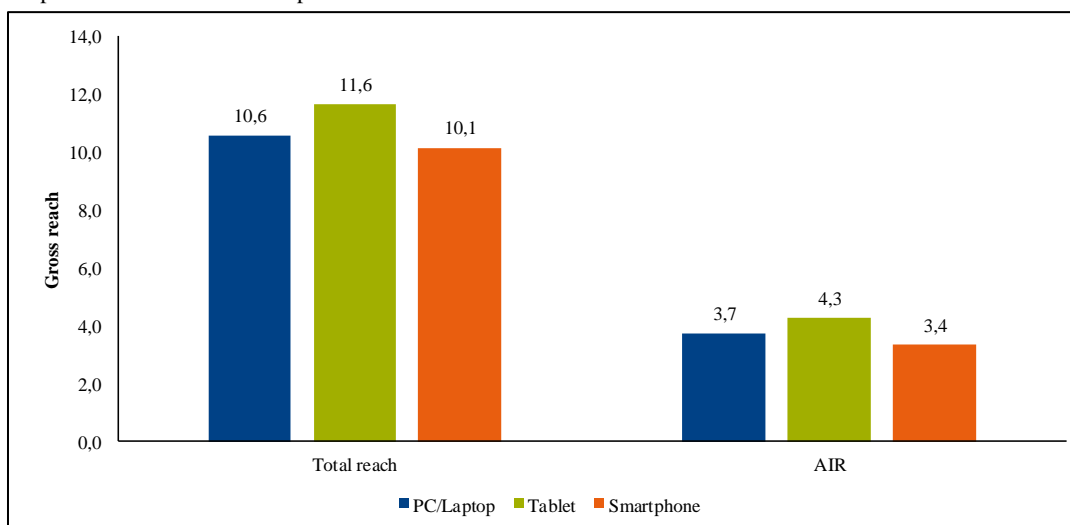
Differences in readership levels

For the analyses of the Dutch readership survey, we examined the answers of almost sixteen thousand CAWI respondents (n=15,974 respondents, i.e. all respondents except those who have been interviewed face to face) who filled in the questionnaire between April 2016 through March 2017. Respondents receive an invitation to fill in the online questionnaire and are free to choose the device they want to use to fill it in: pc/laptop, tablet or smartphone. 70% of the respondents used a pc/laptop, 16% used a tablet and 14% a smartphone. These three subsamples were used in the analyses to answer the question whether the device used to fill in the survey causes respondents to answer differently or whether differences are due to real differences in readership which are caused by the fact that the subsample vary regarding background characteristics.

When comparing the results to the readership questions of the three groups, we find significant differences in reach levels, both in total reach (=read publication in the past 12 months) as well as in average issue readership. Compared to the answers given by respondents via pc/laptop:

- respondents using a tablet report reading more titles;
- respondents using a smartphone report reading less titles.

Graph 9. Total reach and AIR per device



When looking at newspapers and magazines separately and comparing to readership reported via pc/laptop:

- the higher readership reported via tablet is due to magazines; the differences for newspapers are limited and not significant;
- the lower readership reported via smartphone is mainly due to newspapers (significant differences for total reach and AIR; for magazines total reach does not differ significantly but AIR does).

The question of course is the same as for the American analysis: do these differences stem from the use of the device or are they caused by the fact that different kind of people are more likely to use a pc/laptop vs. a mobile device. We therefore continued the analyses and controlled for sample composition per group.

Smartphone compared to pc/laptop

We compared the readership of respondents using a smartphone to fill in the readership survey with the readership of the majority of respondents, i.e. those using a pc/laptop. Respondents using a smartphone are on average younger and only 3% are 65 years of age or older – compared to 20% in the population and pc/laptop-sample. We therefore concentrated the comparison on the age bracket 13-64 years and weighed both subsample to match the population (on the same criteria we use for the general weighting of the Dutch readership survey: gender x age, household composition, level of education, region and internet usage).

The main factor causing differences in readership levels is age: even if the two subsamples are not weighted, readership levels are much closer to each other if we simply exclude the 65+ year.

After controlling for other differences in sample composition, the readership level of the subgroups do no longer differ significantly. This is true both for newspapers as well as for magazines.

Table 1. Index of reach levels smartphone (pc/laptop =100)

	Index smartphone / pc	
	before weighting	after weighting
Newspapers		
total reach	87 sign.	96
AIR	76 sign.	97
Magazines		
total reach	98	97
AIR	91 sign.	98

Even though the questionnaire is not mobile friendly, those respondents who choose to use the smartphone to fill it in nevertheless do not have a problem with it. When asked to evaluate the survey at the end of the questionnaire, smartphone respondents are as positive as pc and tablet respondents (score of 7 out of 10). Also, the time it takes smartphone respondents to complete the questionnaire comparable with that of pc respondent: 28 minutes vs. 29 minutes. The unproblematic use of the smartphone for filling in the questionnaire is probably due to the fact that smartphone respondents are quite experienced and skilled in the use of the devices: while among all respondents 50% have medium to high affinity with mobile devices (based on their use of smartphone and tablet across a wide range of applications), among smartphone respondents this is 64%.

Tablet compared to pc/laptop

Respondents who use a tablet to fill in the questionnaire can be found in all age groups, with a slight skew towards the older age brackets. For the comparison of tablet to pc/laptop, we could therefore include all respondents (13+) and weight them to the population distribution (gender x age, household composition, level of education, region and frequency of using the internet). After weighting, differences decrease, but readership levels are still significantly higher than in de pc/laptop subsample.

This raises the question if the use of a tablet is causing respondents to answer differently. Or is it still a difference in sample composition between people who use a tablet to complete the questionnaire and those who use a pc/laptop, regarding variables that are not part of the weighting? Even though tablets are widely spread through the Dutch population (59% own a tablet), the profile of people with a tablet differs from the general population. And since access to a tablet is the prerequisite

for filling in a questionnaire on a tablet, this difference in profile could cause difference in readership levels – rather than the act of filling in the questionnaire on this device.

Table 2. Index of reach levels tablet (pc/laptop =100)

	Index tablet / pc	
	before weighting	after weighting
Newspapers		
total reach	97	100
AIR	96	98
Magazines		
total reach	113 sign.	107 sign.
AIR	116 sign.	109 sign.

If filling in the questionnaire on a tablet causes respondents to report more readership, then higher readership levels should only be found if respondents who own a tablet actually use it to fill in the readership survey, but not if they use a pc/laptop. If on the other hand they do in fact read more, then the higher readership levels should be found for all respondents owning a tablet, regardless of the device they use to fill in the questionnaire.

Table 3 shows that readership levels of magazines are higher for tablet owners regardless of the device they use to fill in the questionnaire. Also readership of newspapers – which is in line with the overall level – is the same for all three devices. We can therefore exclude the possibility that the device used to fill in the questionnaire will influence the results of the survey.

Table 3. Readership of tablet owners (13-64 years, weighted)

	all respondents	tablet owners			
		total	survey on pc	survey on tablet	survey on smartphone
Newspapers					
total reach	1,7	1,8	1,8	1,7	1,7
AIR	0,4	0,4	0,4	0,4	0,3
Magazines					
total reach	8,5	9,2	9,2	9,2	9,0
AIR	3,1	3,4	3,3	3,5	3,3

Summary of the Dutch findings

We were surprised to see that the share of respondents who fill in the Dutch readership survey on a smartphone was growing continuously. The survey is not mobile friendly and we expected that respondents would avoid filling it in on the smartphone and rather use a pc/laptop or tablet. When we found they were not, we started the analyses with the assumption that we would find that using a smartphone would cause detriment to the readership results. However, the analyses showed that differences in readership are caused by a difference in profile – mainly the fact that smartphone respondents are younger – and when controlling for this, readership levels are on par with those of respondents who use a pc/laptop (the traditional device for filling in online questionnaires). It takes respondents on average the same time to fill in the questionnaire on either device, which means smartphone respondents are quite skilled with this device and can deal with extra scrolling etc. Respondents who are not so skilled will discontinue the questionnaire on smartphone. Ideally they will then turn to a different device, but we have found that more respondents stop altogether when they opened the questionnaire on their smartphone (10% compared to 6% overall). Those who continue to fill in the questionnaire are as positive as other respondents when asked to evaluate the survey at the end of the questionnaire.

While our main concern was with the smartphone, we also included the tablet in the analysis. We did not expect any problems with this device, since it is basically a smaller computer screen. For tablet respondents we found that any differences in readership results can again be attributed to a difference in profile and are not caused by filling in the questionnaire on a tablet.

CROSS COUNTRY CONCLUSION AND DISCUSSION

Respondent using mobile devices to fill in questionnaires deserve our attention, due to the fact that especially smartphone usage is increasing, even for surveys which are not mobile friendly. 'Not mobile friendly' is probably the default for many readership / print surveys with a long history, like the STARCH project in the US and the Dutch national readership survey NPM.

Both in the US as in the Netherlands, computers are still the device most often used to fill in the questionnaires, but there has been a rapid increase in the past two years of respondents using smartphones. The impact on the two surveys are somewhat different and then again, very similar.

- In STARCH, there is hardly any differences in the outcomes for the key metric 'ad noting' between computers and smartphone. Also, the time spent on the survey is the same for the devices. The main driver for 'ad noting' is reader type and the various types of readers use the devices to a very similar degree to fill in the questionnaire. Therefore, any changes in the results of the survey reflect real changes and are not caused by device choices of respondents.
- In NPM, we find different readership levels depending on the device that is used to fill in the questionnaire. As in the American case, the time to fill in the questionnaire does not differ. The profile of respondents choosing the one or the other device does differ: as in general and true for both countries, smartphone users are younger. The difference in age is a main predictor for the readership levels and together with other respondent characteristics which are used in weighting, this profile differences explains the differences in readership levels.

In both countries we come to the conclusion that the key metrics are not impacted by the device choices of respondents. This leads us also to the conclusion that 'banning' smartphones as a means to fill in the questionnaire would be ill advised. The response / cooperation benefits from giving respondents a choice in how to participate. If we make it impossible to fill in questionnaires via smartphone, we might introduce bias into the samples, because of the distinctive profiles of the various groups who choose to use a smartphone or a tablet or a computer.

The findings that the device choice of respondents does not impact the key metrics does not mean that we should not concern ourselves with the mobile friendliness of our questionnaires. Of course we should explore how we can ask the same questions in such a way that they fit onto the small screen of a smartphone. This will lighten the respondent burden and can thereby increase response / cooperation even further.

The findings also mean that the rules of thumb about what a mobile friendly questionnaire is may need to be reconsidered. 'Keep it short' may be a too simplistic approach. We would rather agree with the recommendations of Luck, presented under the heading 'Common sense ... remember that each study is unique'.

References

Luck, K. (PDRF 2013). IMPACTS OF THE MOBILE REVOLUTION ON ADVERTISING DATA COLLECTION METHODS.