The Grouping of Items in Mobile Web Surveys

Modes, Measurement, Modelling:
Achieving Equivalence in Quantitative Research

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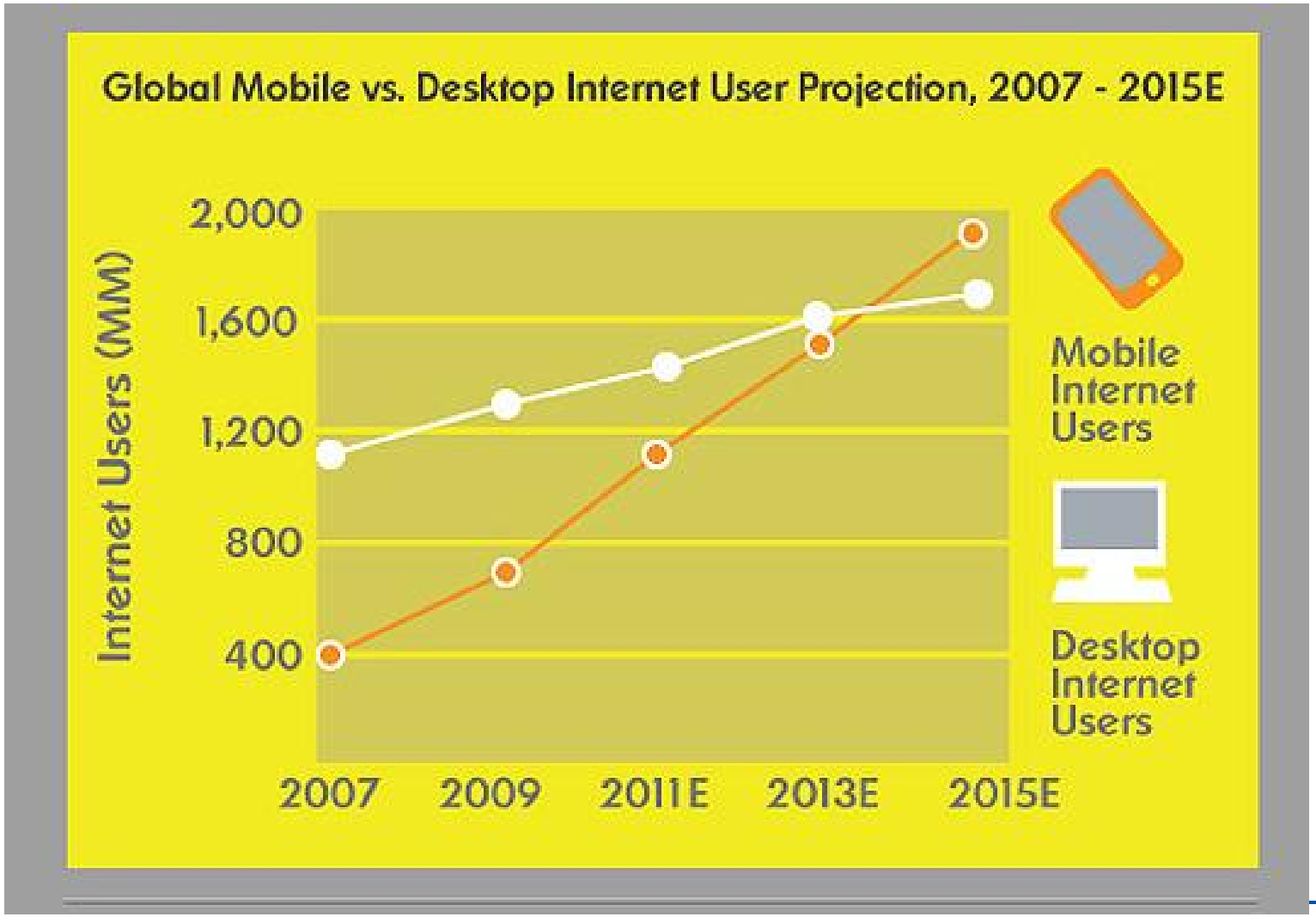
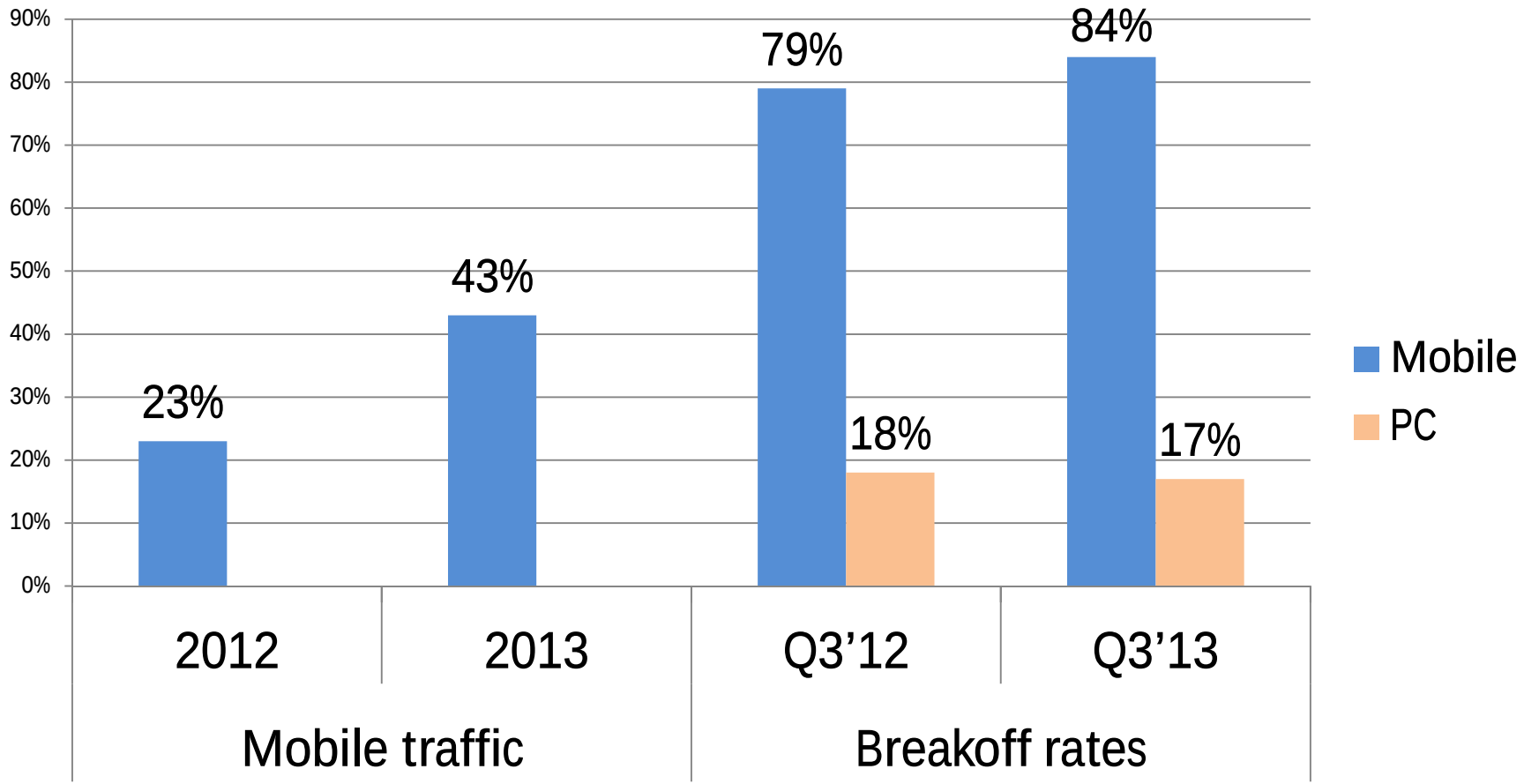
Mobile is not a trend, it's a reality



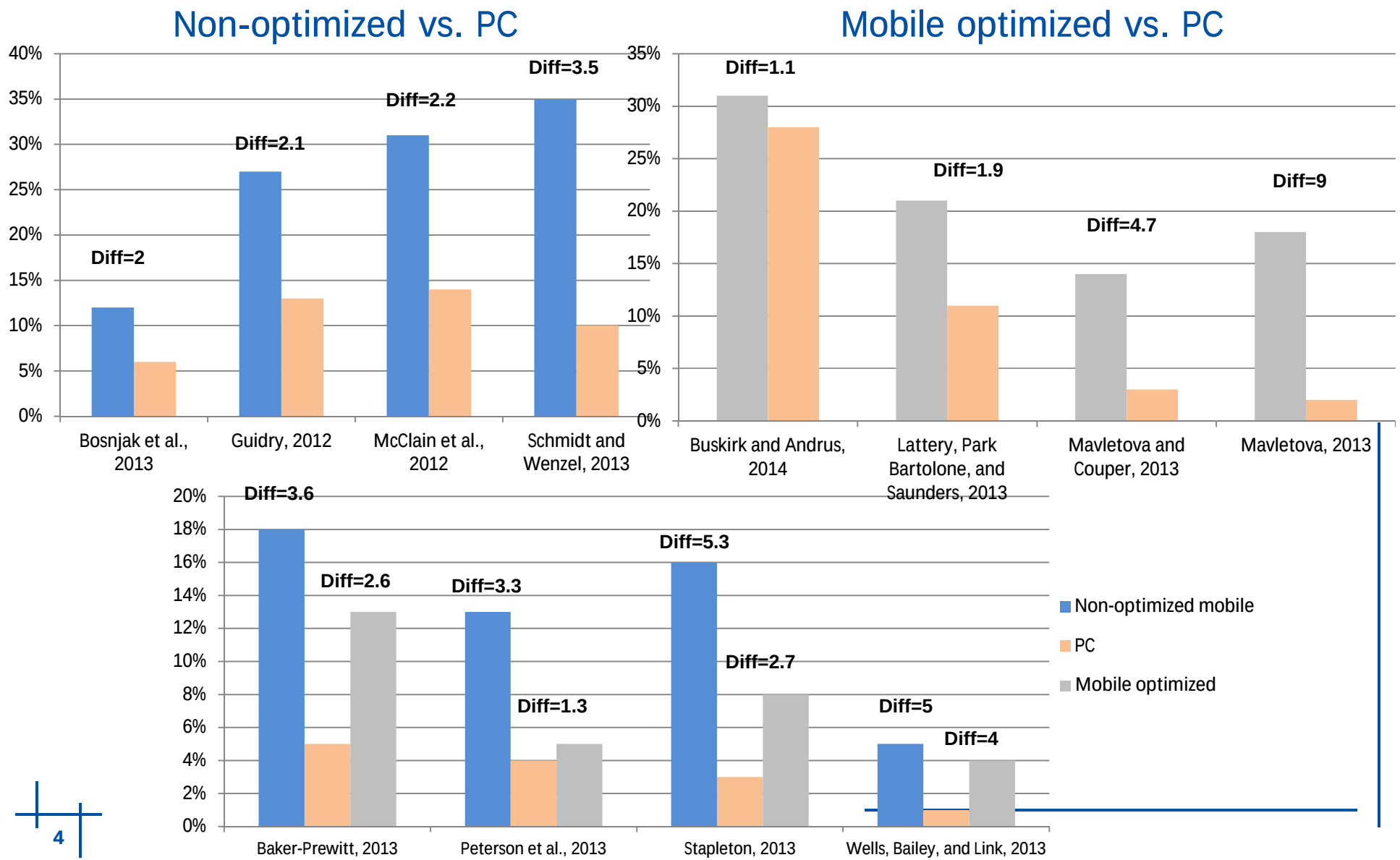
Morgan Stanley Data

Mobile traffic and breakoff rates

KINESIS

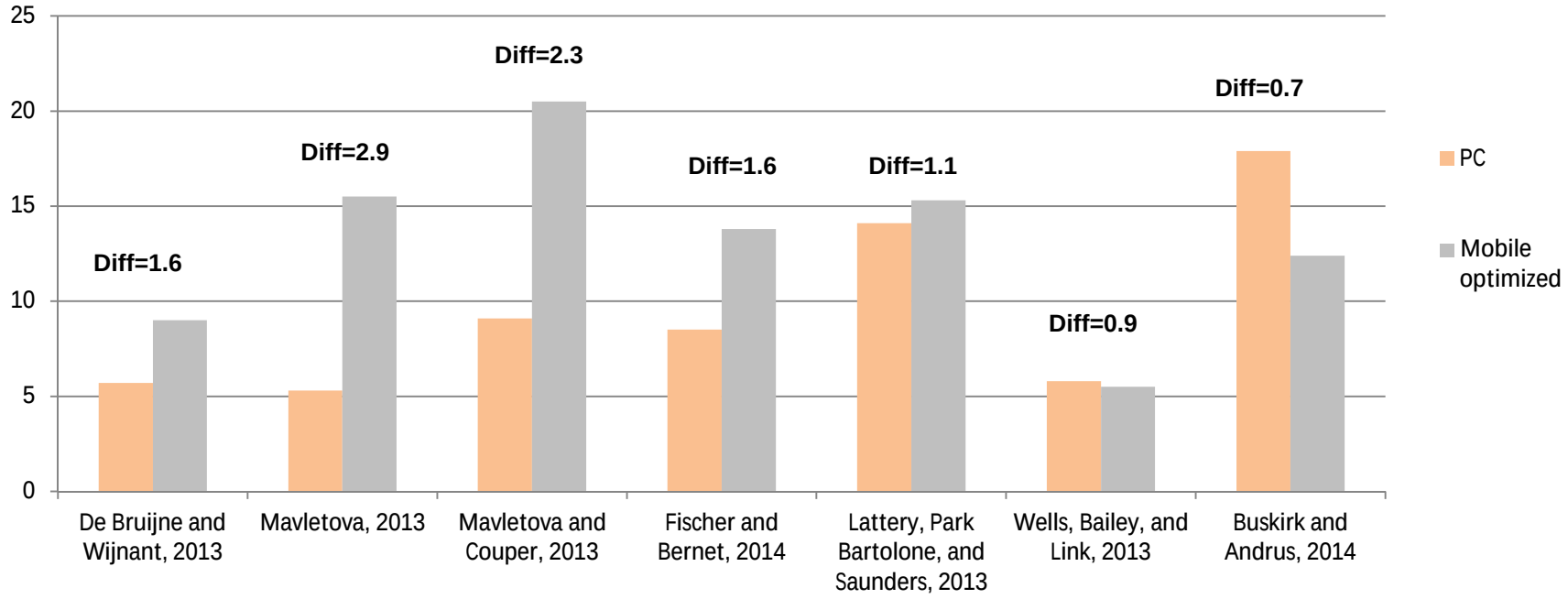


Breakoff rates: non-optimized vs. PC vs. mobile optimized

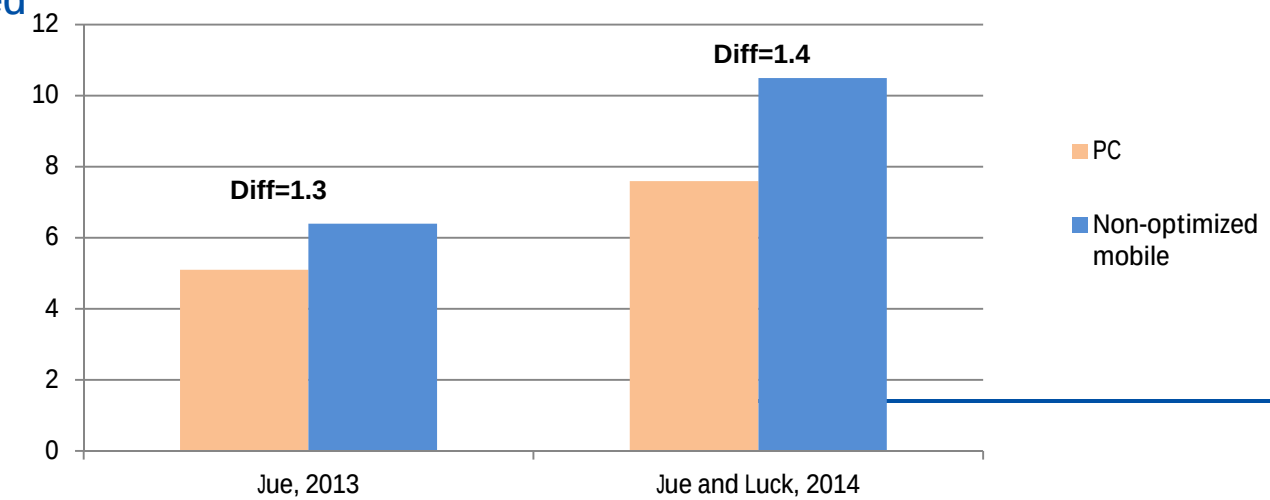


Completion times: PC vs. mobile

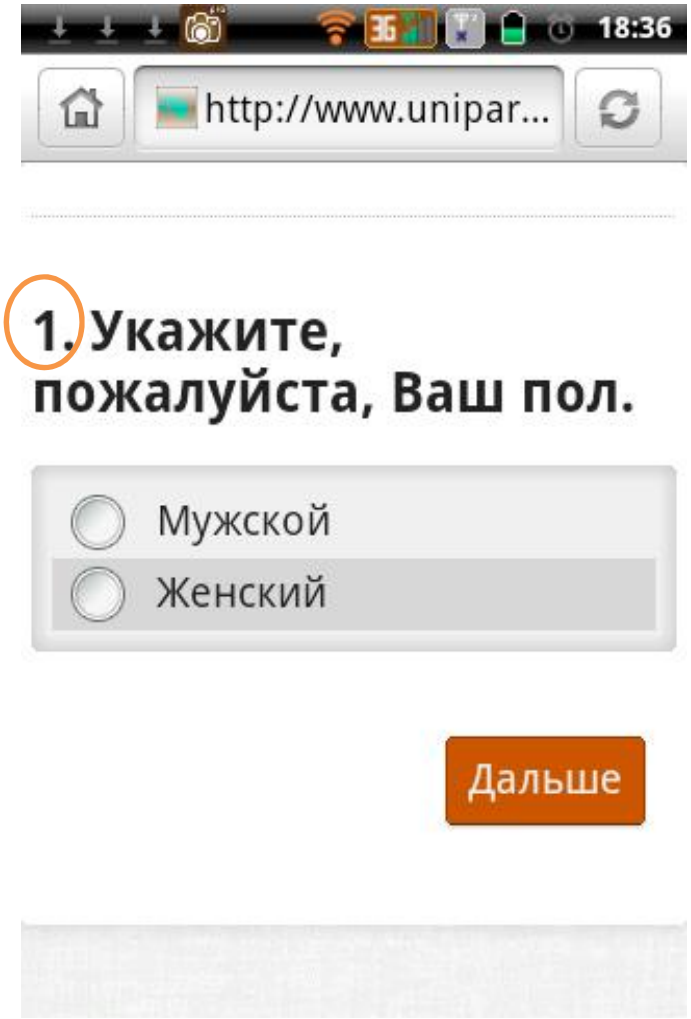
Mobile optimized vs. PC



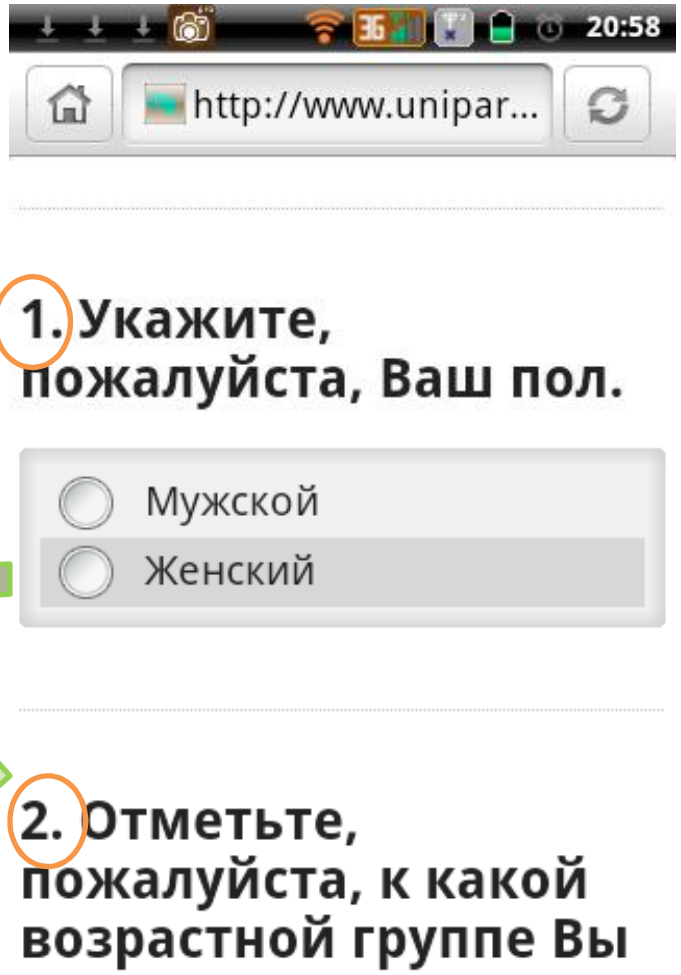
PC vs. non-optimized



Paging



Scrolling



AAPOR suggestion:

Optimizing an online survey for completion in a mobile browser is something of an art, but there are several notable conventions that can make it easier for respondents to complete.

The overall layout should minimize the need for scrolling (either horizontally or vertically) to the extent possible. The number of questions per screen should generally be two or less to minimize scrolling.

Mobile Technologies for Conducting, Augmenting and Potentially Replacing Surveys: Report of the AAPOR Task Force on Emerging Technologies in Public Opinion Research (April, 2014)

Scrolling vs Paging Designs

- McGeeney & Marlar (2013):
  - lower breakoff rates in the scrolling versions (13% of mobile web respondents)
- Mavletova & Couper (2013):
  - 17 items (2 pages vs 17 pages)
  - Found shorter completion times, fewer technical problems, lower breakoff rate, & higher subjective evaluation for scrolling version
  - No significant differences in item nonresponse

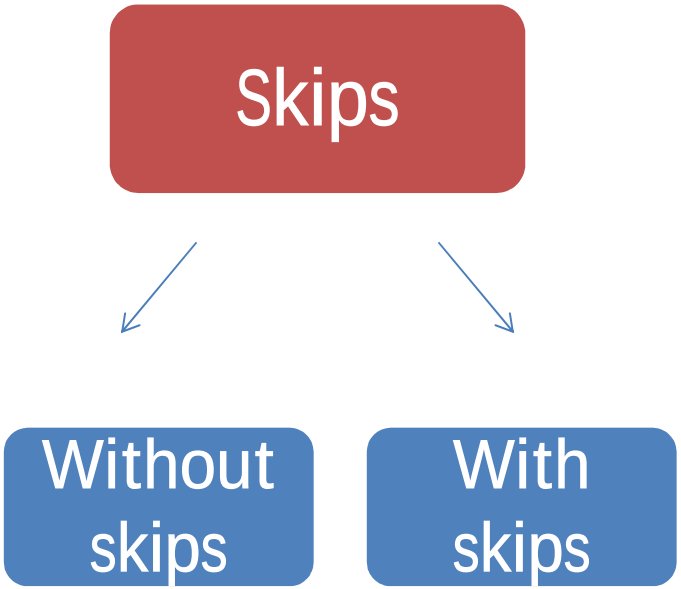
Research Questions

- Does the number of questions presented on the page have an effect on data quality in a scrolling design in mobile web surveys?

- Is it different in a survey with user-controlled skips (conditional questions) and in a survey without skips in the scrolling design?

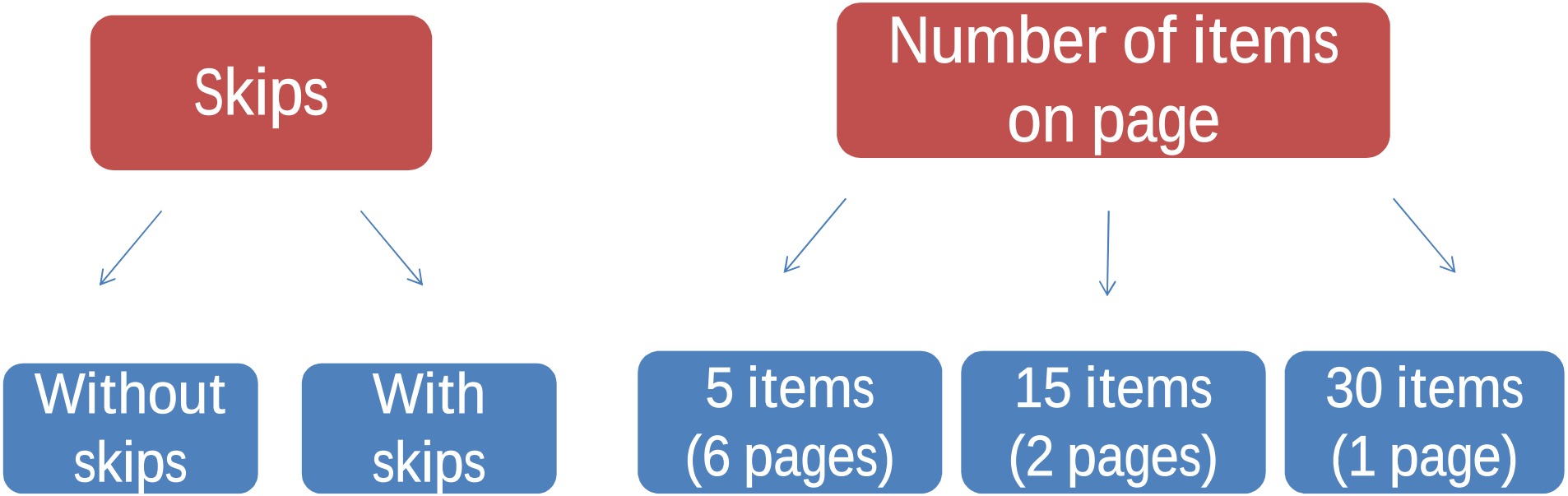
Experimental Design and Hypotheses

Experimental Design



- Simple user-controlled skips (no hyperlinks)
- 7 skips

Experimental Design



- Simple user-controlled skips (no hyperlinks)
- 7 skips

Questionnaire with or without skips

	Hypotheses
Breakoff rate	Higher in survey with skips
Underreporting	

Number of items on page

	Hypotheses
Breakoff rate	Higher with 30 items per page
Completion time	Lower with 30 items per page

Number of items on page

	Hypotheses
Breakoff rate	Higher with 30 items per page
Completion time	Lower with 30 items per page
Item nonresponse	Higher with 30 items per page
Measurement error	Higher with 30 items per page

Data Collection

- ü Volunteer online access panel (Online Market Intelligence)
- ü 10 minute survey
- ü Respondents were encouraged to complete the survey via mobile phone
- ü Fieldwork: 9-20th October, 2013, Russia
- ü Software: Unipark
- ü 7,740 SMS invitations, 2,032 respondents
- ü Participation rate=26.8%

Questionnaire

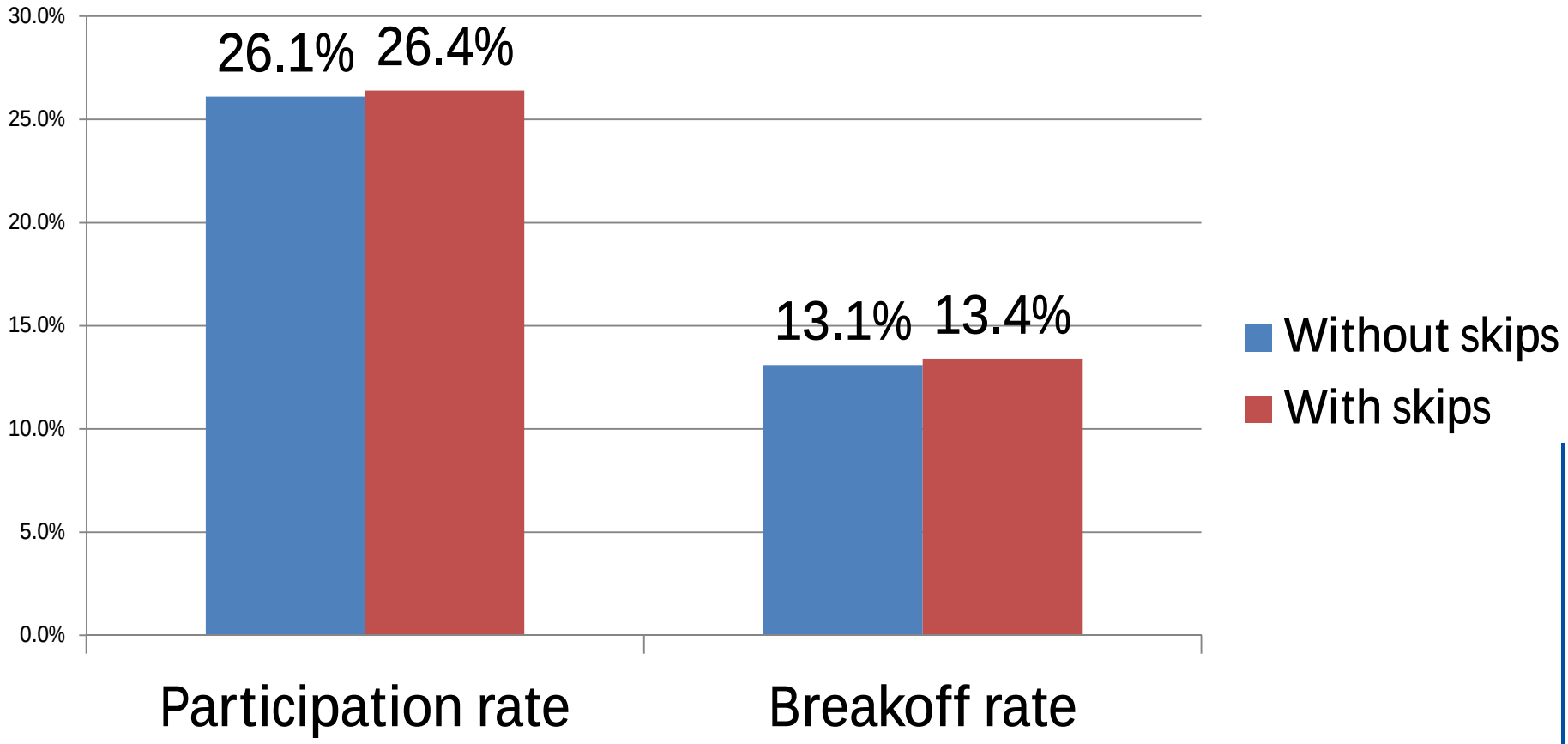
- 30 questions: discrimination, with a special focus on age discrimination

- Two questionnaires (with and without skips) were made as similar as possible

- None of the questions were obligatory

Results: Skips

Participation Rates and Breakoff Rates



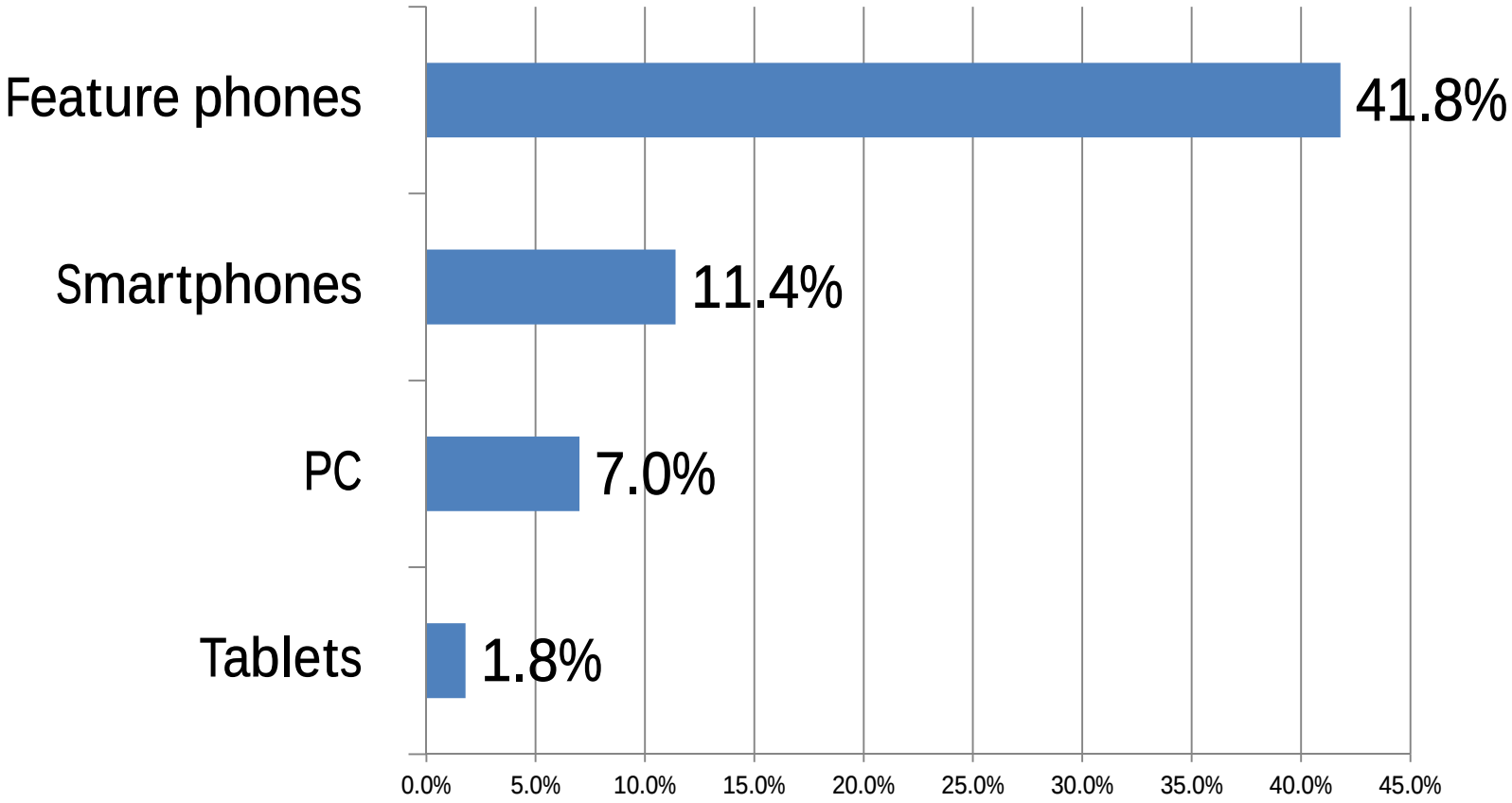
Sample Composition by Devices

Device	%
Smartphones	90.6%
Feature phones	4.7%
Tablets	2.7%
PC	2.0%
Total	2,032

Breakoff Rate by Devices

Device

Chi-square=
131.123***
(*df*=3)



***p<0.001

Underreporting

Without skips	With skips
13. What opinion do you agree mostly? • In each professional area it is permissible to set age limit • In none of professional areas it is permissible to set age limit • In some professional areas it is permissible to set age limit, in others – not • Difficult to answer	13. What opinion do you agree mostly? • In each professional area it is permissible to set age limit → GO TO Q16 • In none of professional areas it is permissible to set age limit→ GO TO Q16 • In some professional areas it is permissible to set age limit, in others – not • Difficult to answer → GO TO Q16

Q14, Q15 – open-ended questions

Underreporting

Without skips	With skips
13. What opinion do you agree mostly? • In some professional areas it is permissible to set age limit, in others – not (75%)***	13. What opinion do you agree mostly? • In some professional areas it is permissible to set age limit, in others – not (58%)

No difference between
5, 15, 30-item per page conditions

*** $\chi2(3)=82.524$, $p<0.001$

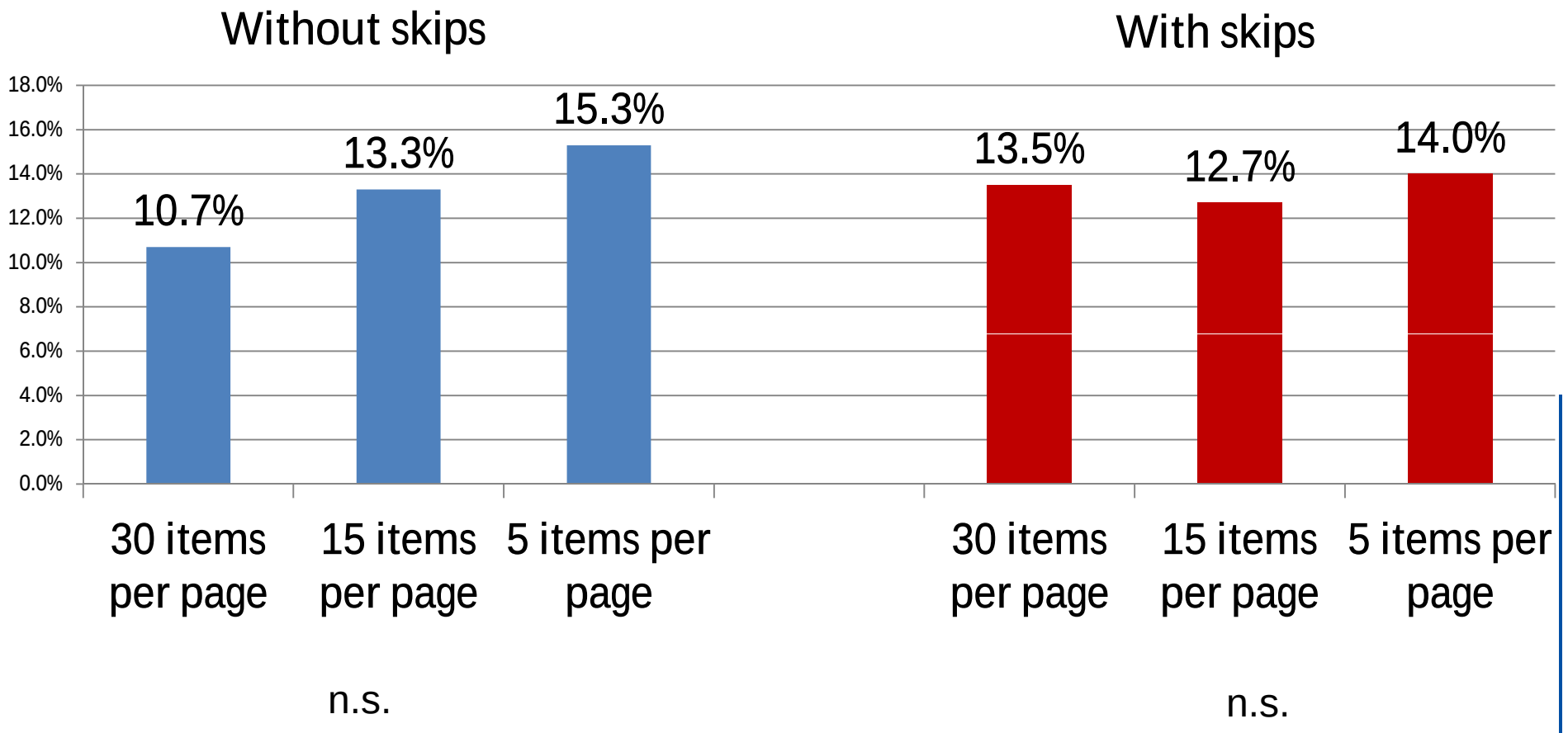
Survey Evaluation

- No differences:
  - Technical problems while completing the survey
  - Subjective rating of the survey
  - Subjective rating of difficulty of filling out the survey

- Survey with skips:
  - 2.5% reported difficulties following instructions
  - No differences between 5, 15, and 30-item per page conditions

Results: number of items per page

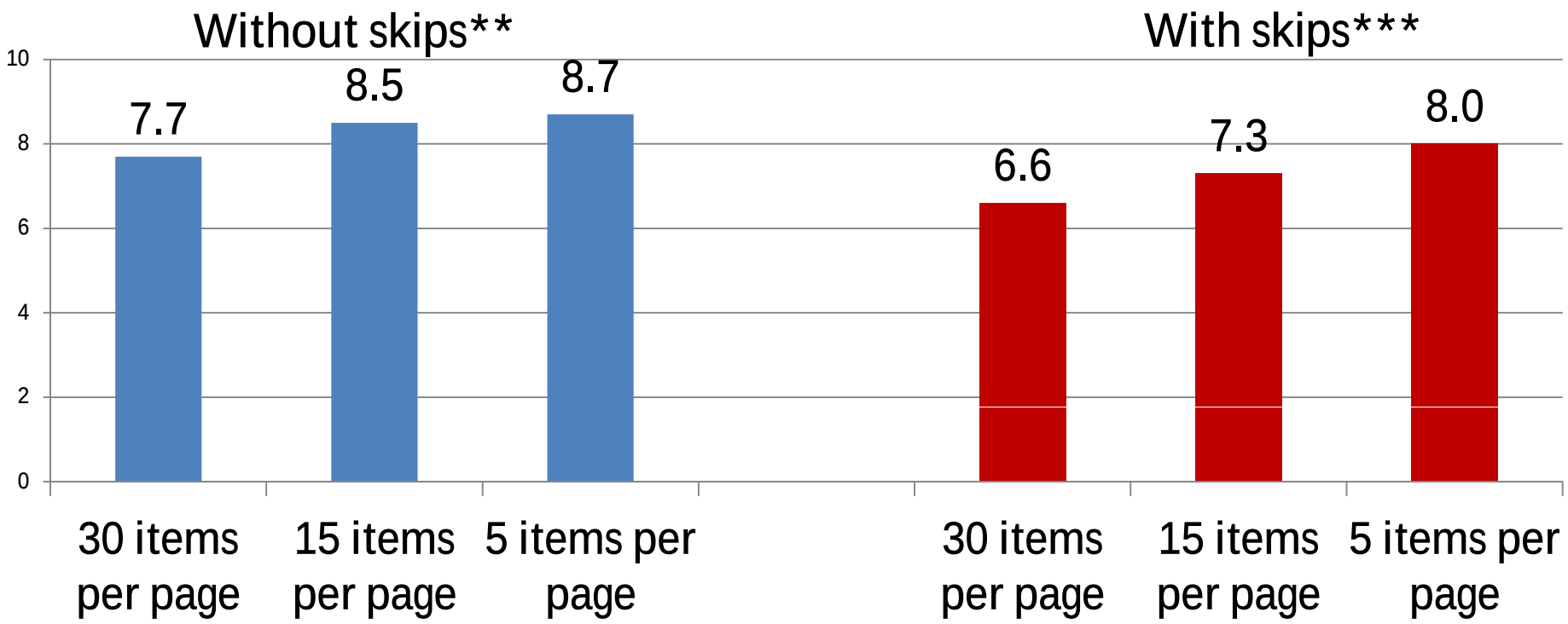
Breakoff Rates



n.s.

n.s.

Completion Time (min)



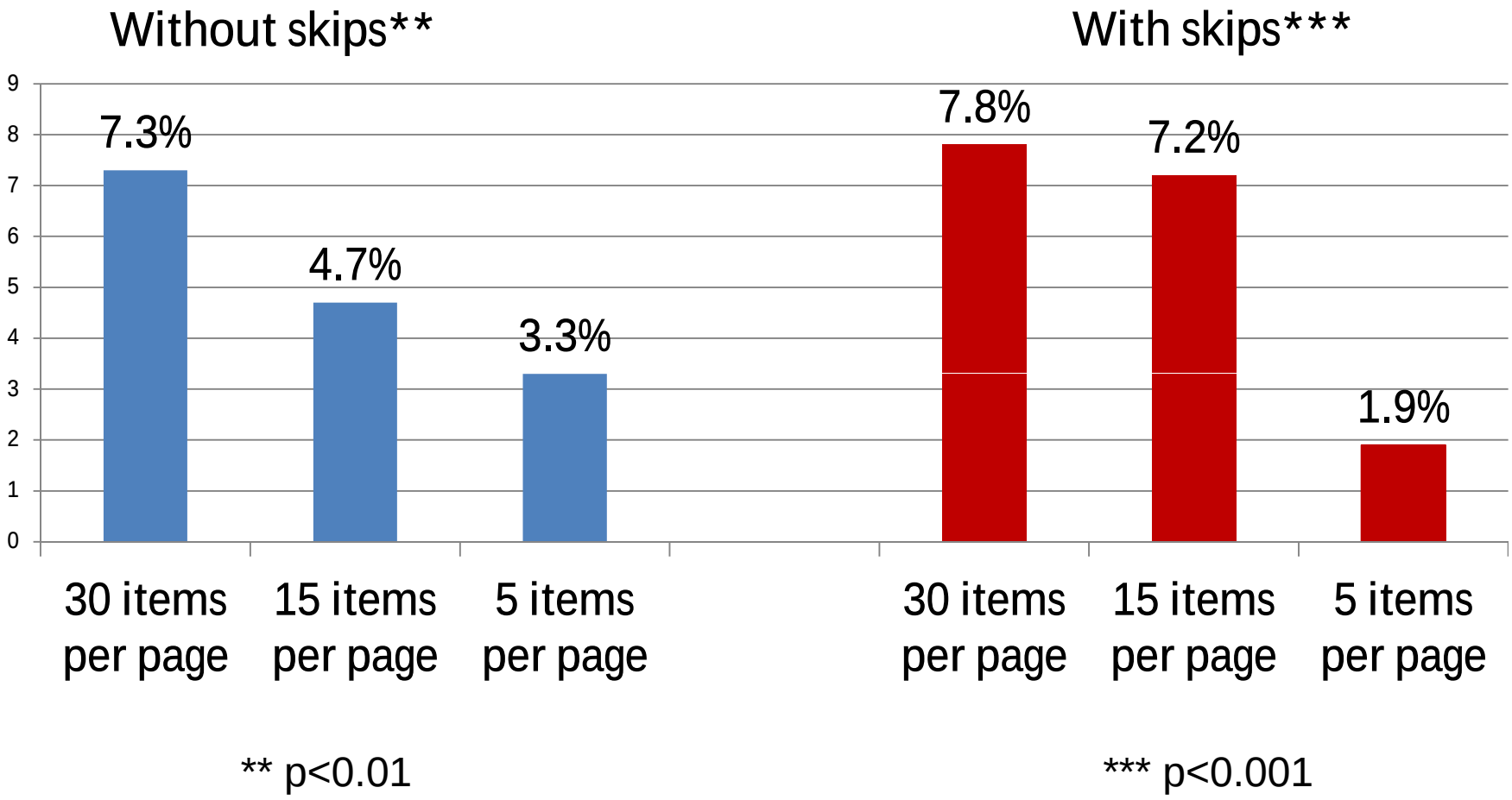
** p<0.01

*** p<0.001

Main effect of skips is also significant (p<.001)

In both questionnaires: no difference in the subjective estimate of completion time

Item Nonresponse



** p<0.01

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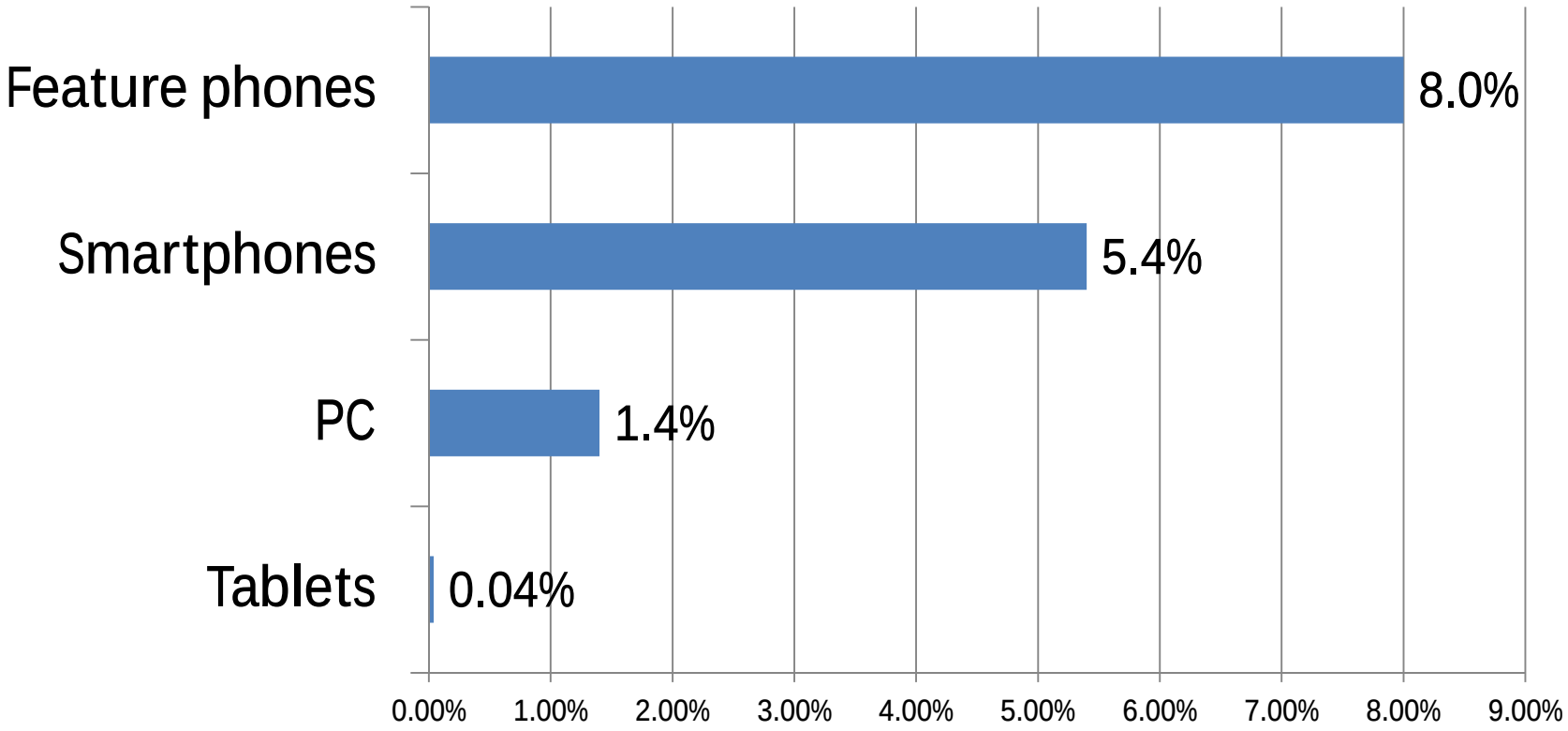
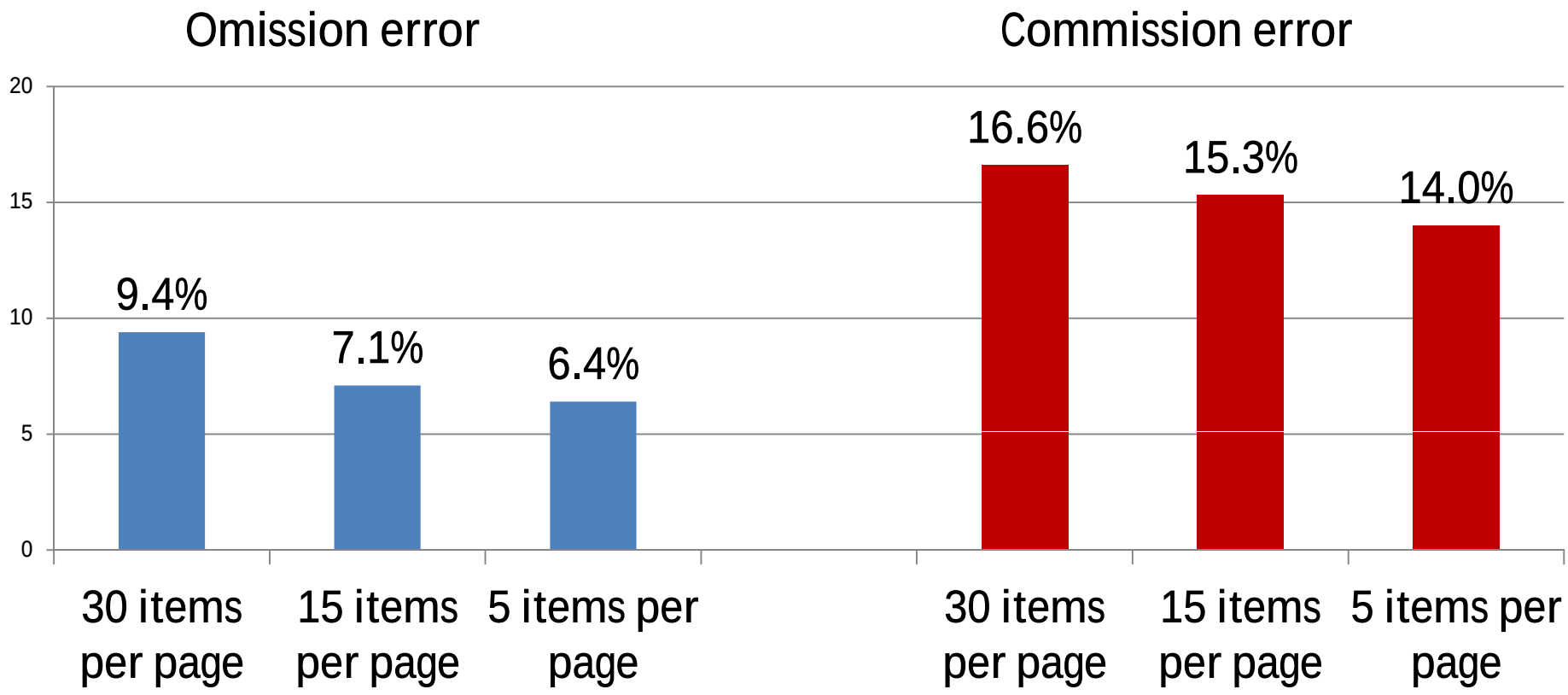
Item Nonresponse



$F(3,2026)=3.681$, $p<0.05$

Omission and Commission Errors



n.s. (p=.06)

n.s.

Partial Data among Breakoffs

Number of questions completed	30 items	15 items	5 items
0	100 %	78 %	45%
5	0%	0%	14%
10	0%	0%	19%
15	0%	22%	11%
20	0%	0%	5 %
25	0%	0%	5%
Number of breakoffs	95	101	114

Measurement Error

- We examined:
  - Length of open-ended responses
  - Proportion of nonsubstantive responses
  - Primacy effects (choosing 1st option in 4 single- and multi-response questions)

- No significant differences

Main Findings

1) Questionnaire with/without skips: almost no differences
   - Might be some motivated underreporting in the cognitively demanding tasks
2) Number of questions per page: effect on nonresponse but not on measurement error
3) Questionnaire without skips: 30 items per page → lower breakoff rate, shorter completion time, but higher item nonresponse
4) Questionnaire with skips: 30 items per page → higher item nonresponse and omission error rate