



If I Text, Will You Respond?

A Meta-Analysis of the Impact of Text Messaging During Recruitment and Data Collection

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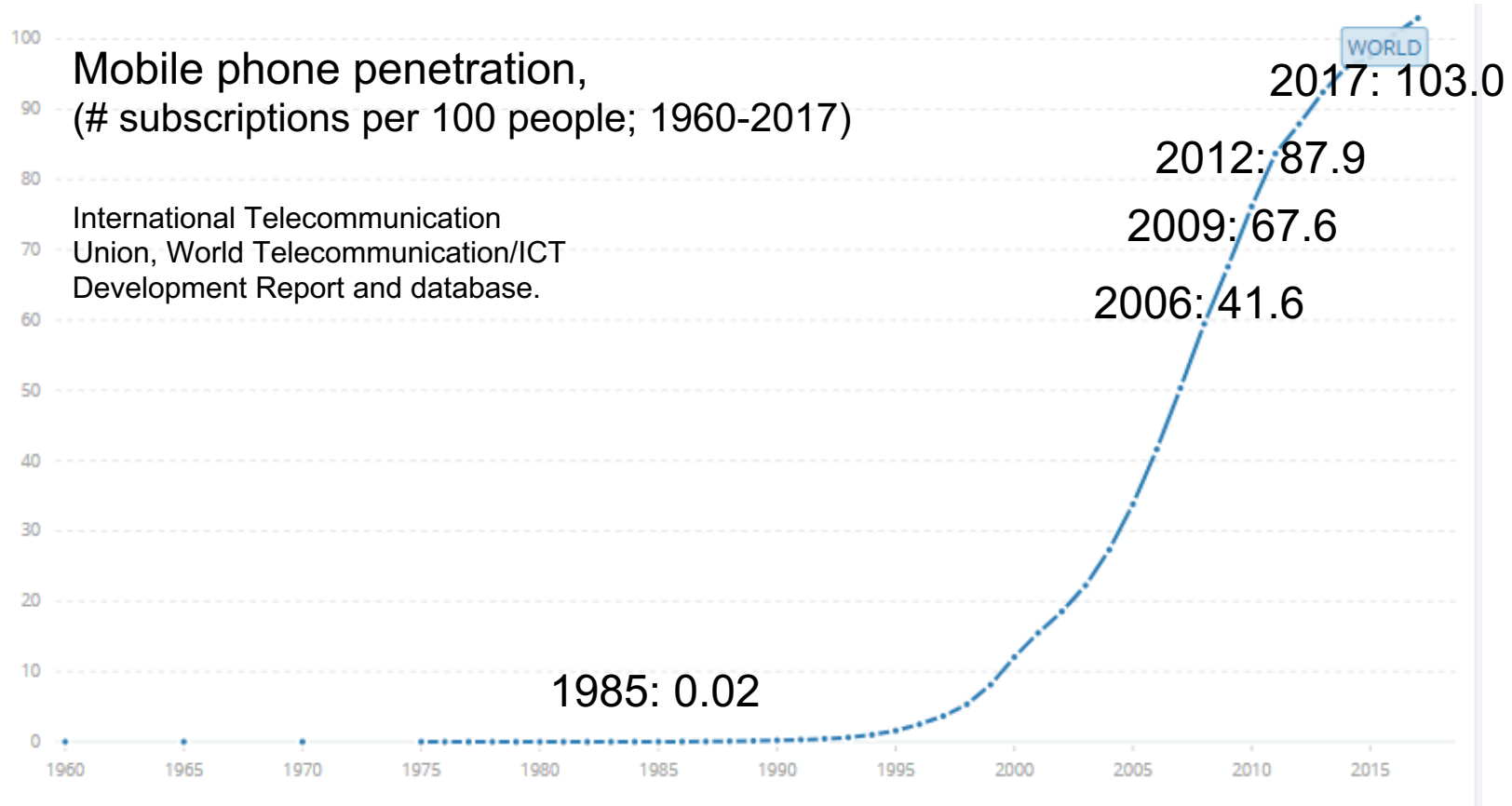
Acknowledgements

- We thank Erin Fordyce, NORC at the University of Chicago, for her assistance reaching out to authors and coding.

The Challenge and Solution

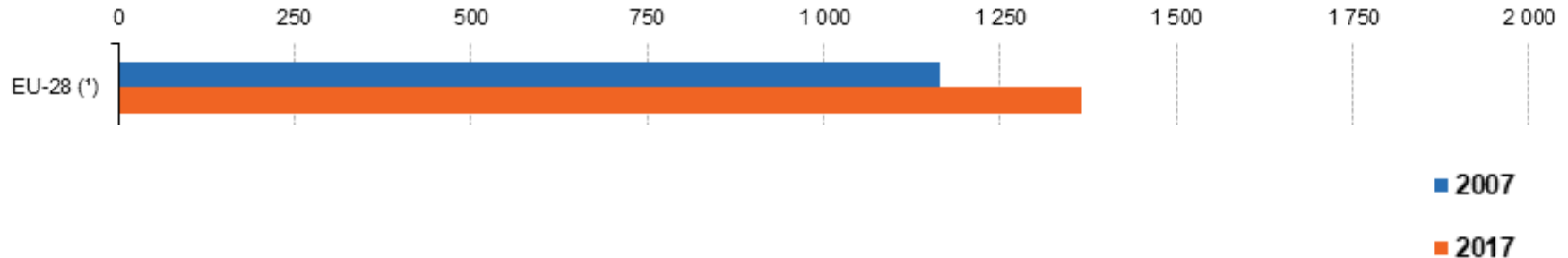
- The challenge: Growing nonresponse (globally) and measurement error
- Suggested solution: (Emerging) alternative modes
 - Use of SMS/Text message for
 - Recruitment
 - Data collection
- When was the first text message sent (ever)?
- The first published study?

Cell/Mobile Phone Penetration (Global)



Cell/Mobile Phone Penetration (Europe)

Mobile phone penetration, 2007 & 2017 (# subscriptions per 1,000 inhabitants)⁺



+ (*) 2016 instead of 2017.

(*) 2007: estimate.

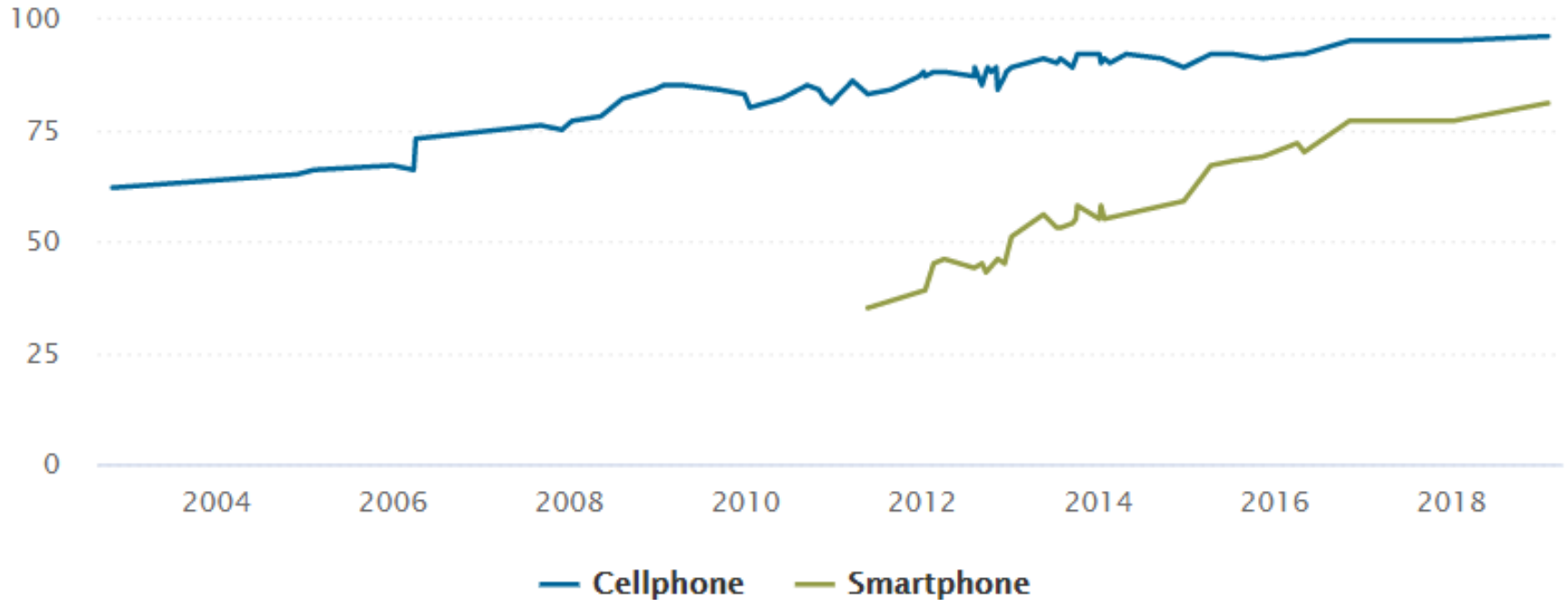
(*) Break in series.

(*) 2008 instead of 2007. This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

Source: Eurostat (online data codes: isoc_tc_ac1, isoc_tc_mcsupe and demo_pjan) and European Commission, *Digital Economy and Society*

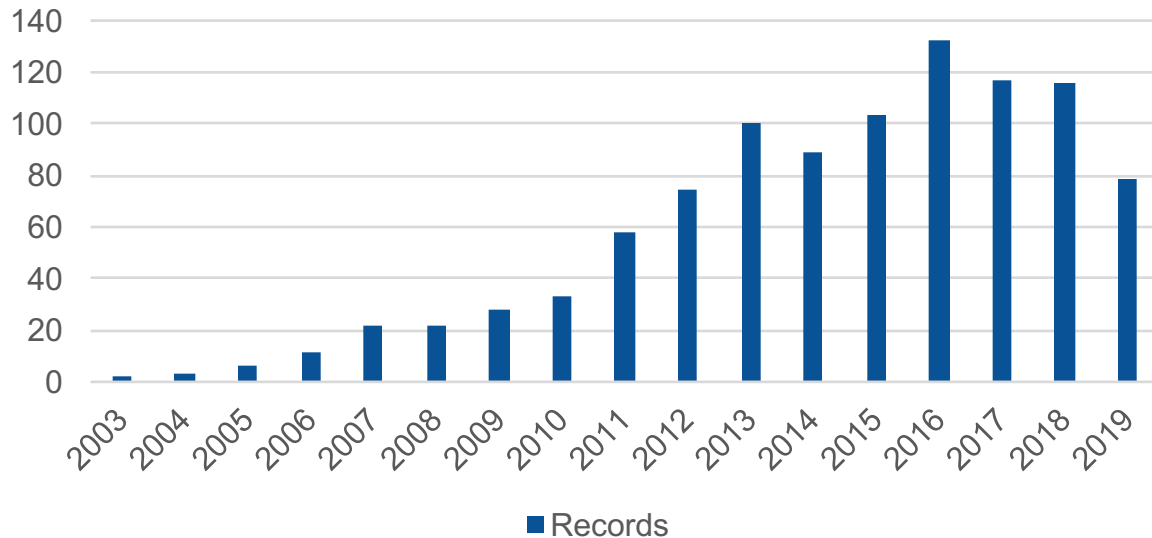
Cell/Mobile Phone Penetration (U.S.)

% of adults who own a cellphone and a smartphone



Use of SMS in Social Science Studies

- Number of published studies (Web of Science (SSCI); n=996; key words: text messag*; SMS; short message service)



- Bauer et al. (2003).
Use of Text
Messaging in the
Aftercare of Patients
with Bulimia
Nervosa
- Jessen et al. (2003).
Forensic Study of a
Case Involving SMS
Text-to-speech

Research Questions

Recruitment

1. What is the impact of (adding) text message as a recruitment mode on response rates [and nonresponse error]?
2. How is this relationship moderated by other survey conditions (e.g., placement of text message, sequence, incentives)?

Data Collection

3. What is the impact of (adding) text message as a data collection mode on response rates, [nonresponse error,] and measurement error?
4. Which other survey conditions affect data quality obtained via SMS (e.g., type of completion: single sitting vs. modular; optimal length)?

Meta Analyses Methods

Include most recent advancements searching

- Conferences (ESRA, AAPOR; 2013-2018)
- Journals based on ESRA & AAPOR presentations
- Search terms
 - SMS, short message service, text, text messag*
- ➔ Start: n=82 potential contributions
 - > deduplication
 - > relevance (SMS; NOT: EMS, MMS, IM, emergency alerts)
 - > availability ➔ n=41

Meta Analyses Methods

- Coding – work in progress for available studies (and to be expanded)
 - Recruitment/data collection, experiment type, outcomes, region, etc.

Citation (e.g. Bilgen, 2019)	Eligible for analyses (ESRA)? 0: No 1: Yes	Following criteria met? 0: No; 1: Yes At least one of the survey recruitment and/or data collection modes is SMS.	Following criteria met? 0: No; 1: Yes A split sample experimental design that assigns intervention (i.e. same survey conditions, other/wheel)	Following criteria met? 0: No; 1: Yes Data on fills or yield rates from SMS and the other mode(s) are available	Data Collection or Recruitment or both?	Europe, US, Other ak	Experiment was in: 5 prenotification = 0, invitation = 1, reminder = 2	Recruitment experiment focus was of type: 0 = no mode comparison (e.g., incentive amount, message wording); 1 = mode comparisons (parallel or	Data collection experiment was of type: 0 = modular vs. single 1 = length 2 = response options 3 = DC mode
Hass, Keusch, Kreuter, 2018	1	1	1	1	Data Collection	2			0
Mavletova and Couper, 2014 (invitation experiment)	1	1	1	1	Recruitment	2	1	1	
Sala, Respi, and Decataldo, 2015	1	1	1	1	Recruitment (reminders)	0	2	1	

Meta Analyses Methods

Eligibility Criteria	# of studies	# of experiments
At least one of the survey recruitment and/or data collection modes is SMS	41	55
A split sample experimental design that assigns intervention (i.e. same survey conditions, otherwise)	20	34
Data on RRs or other outcomes from SMS and the other mode(s) are available	18	32

- Recruitment: 25 experiments*
- Data collection: 9 experiments*

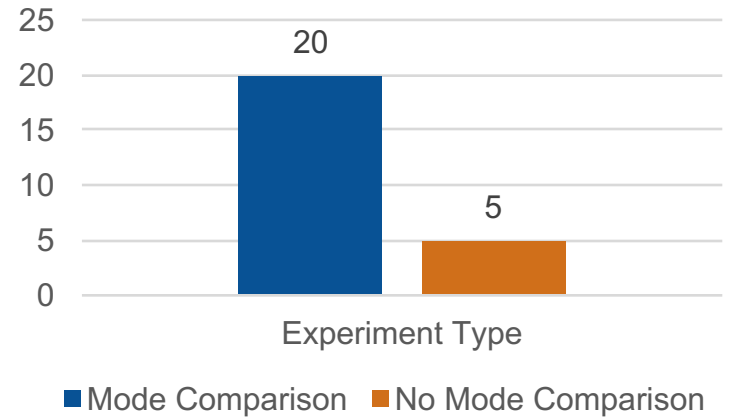
* note: 2 experiments analyzed in both conditions

Recruitment – Results

1. What is the impact of (adding) text message as a recruitment mode on response rates [and nonresponse error]?
2. How is this relationship moderated by other survey conditions (e.g., placement of text message, sequence, incentives)?

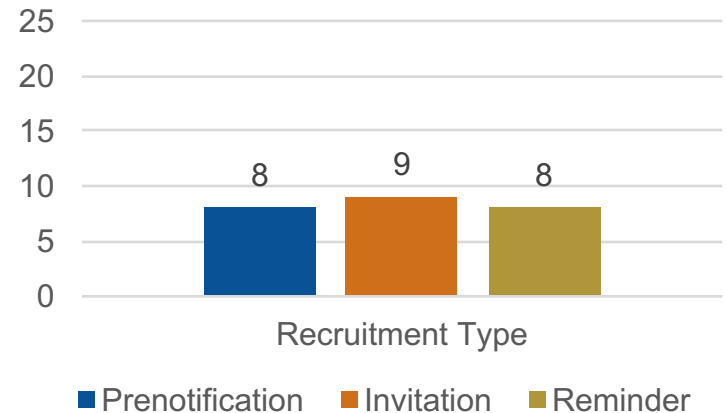
Text Messaging During Survey Recruitment

- Experiment type
 - Mode comparison vs. not (e.g., incentive exp.)



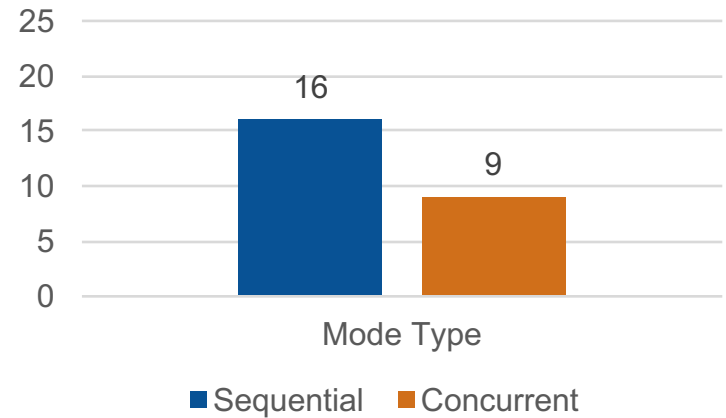
Text Messaging During Survey Recruitment

- Experiment type
 - Mode comparison vs. not (e.g., incentive exp.)
- Recruitment type
 - Prenotification, invitation, reminder



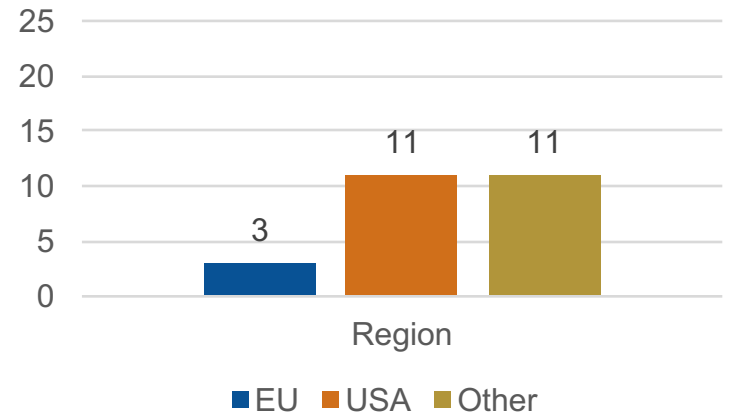
Text Messaging During Survey Recruitment

- Experiment type
 - Mode comparison vs. not (e.g., incentive exp.)
- Recruitment type
 - Prenotification, invitation, reminder
- Mode type
 - Sequential vs. concurrent

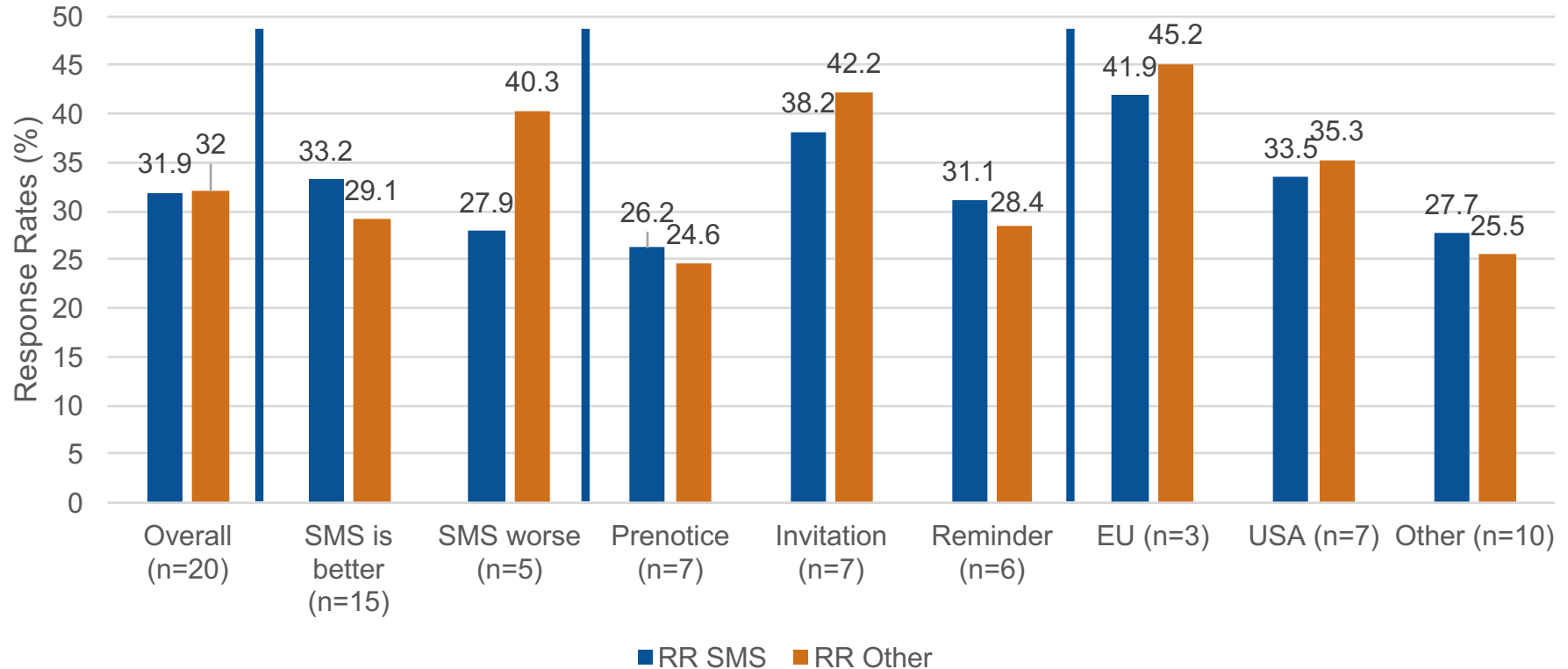


Text Messaging During Survey Recruitment

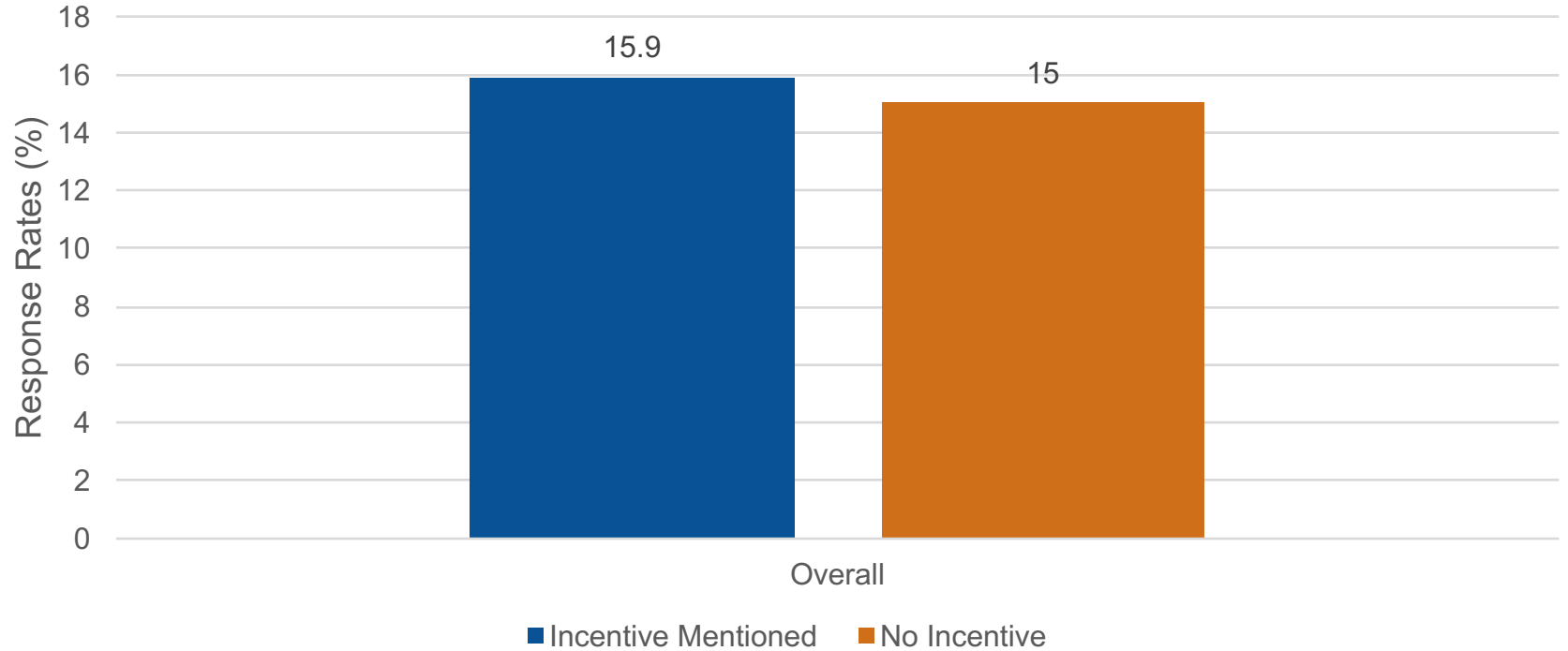
- Experiment type
 - Mode comparison vs. not (e.g., incentive exp.)
- Recruitment type
 - Prenotification, invitation, reminder
- Mode type
 - Sequential vs. concurrent
- Region
 - EU, USA, other



Results: Recruitment – Mode Experiments (n=20)



Results: Recruitment – Incentive Experiments (n=4)



Research Questions

Recruitment

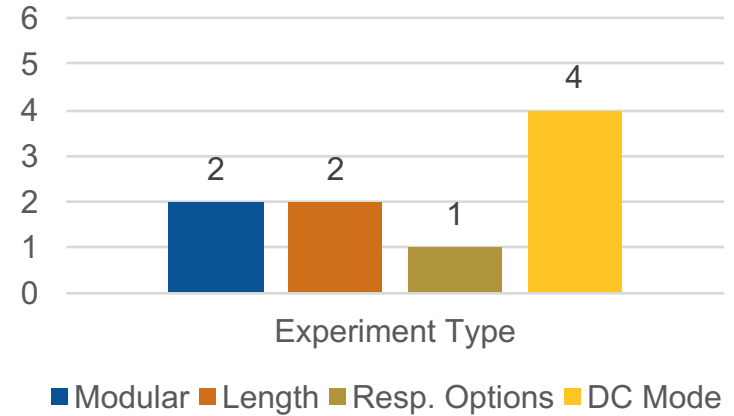
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Data Collection – Results

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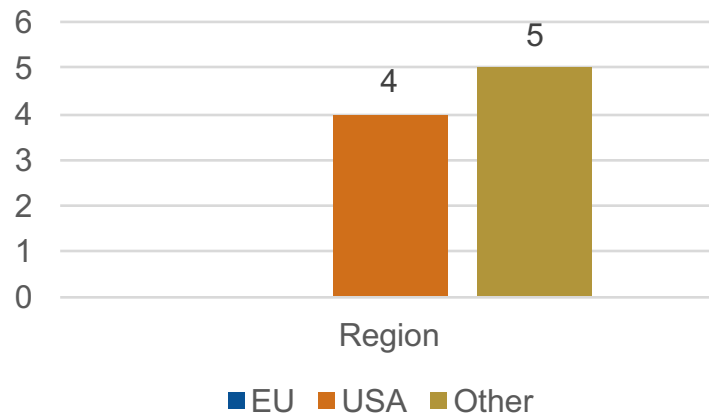
Text Messaging for Data Collection

- Experiment type
 - Single vs. modular; fewer vs. more questions; response options; DC mode

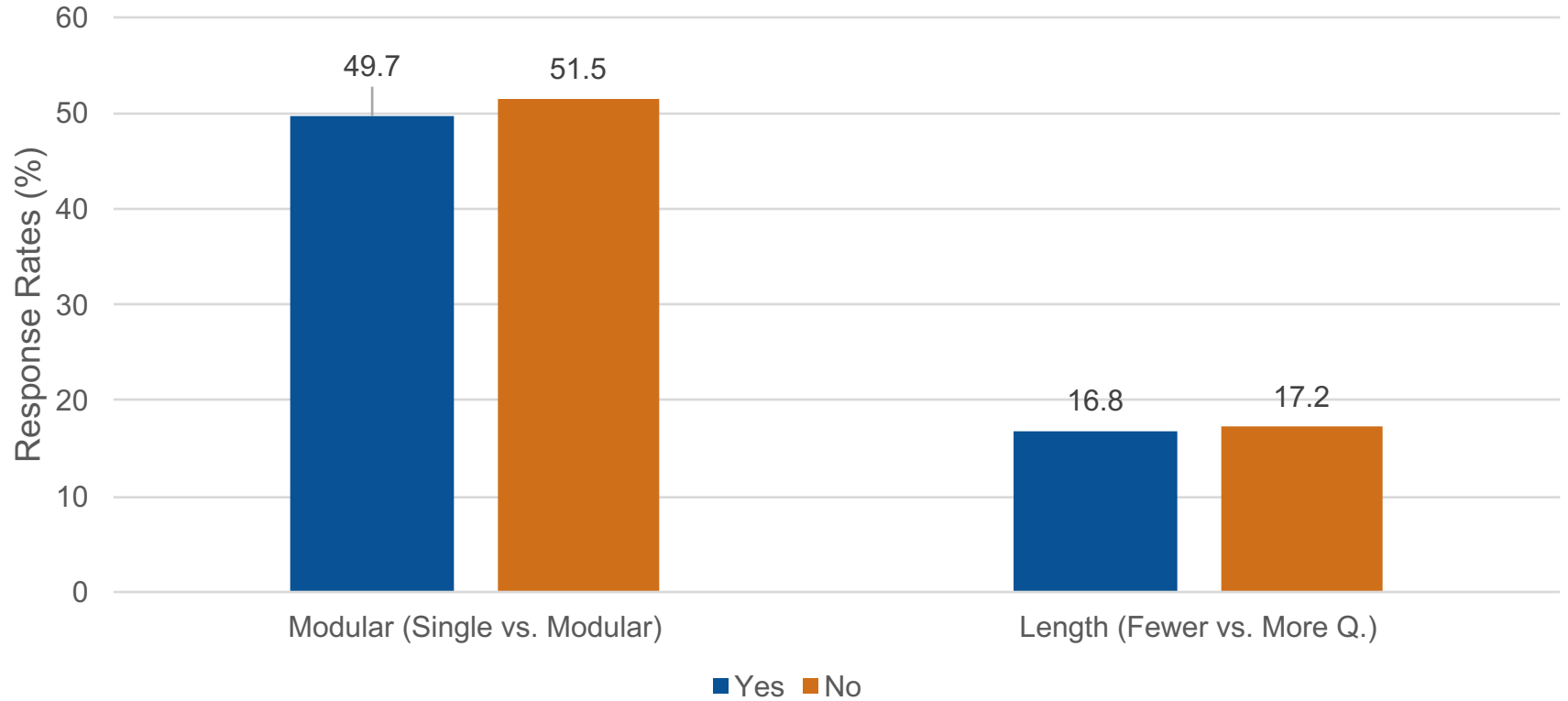


Text Messaging for Data Collection

- Experiment type
 - Single vs. modular; fewer vs. more questions; response options; DC mode
- Region
 - EU, USA, Other



Results: Data Collection (n=2 each)



Results: Data Collection

- Response options (n=1; Schober et al. 2014)
 - Response options: single- (“1”, “2”) vs. multi-character (“yes”, “no”)
 - Responses skewed towards fewer characters – esp. in multi-character condition
- DC mode (n=4)
 - Response rates:
 - Text = web < phone (Marlar et al. 2014)
 - Text > IVR/Voice; Human > automated (Schober et al. 2015, 2019)
 - Item response rates:
 - F2f to text > text to f2f (Velthoven et al. 2018)

What Now? A Few Recommendations for the Use of SMS

We are not quite there yet!

Tentative results:

- Complementing other recruitment modes with SMS pre-notification(s) and reminder(s) increases response rates (esp. outside of Europe and the US)
- Pick your battles: 160 characters (e.g., mention incentives or web link if applicable) → **these are 86 characters**
- Modular performs slightly better
- No considerable difference by number of questions (6-16 questions)
- Human interaction (e.g., social trust) enhances response rates in SMS data collection but may have adverse effects on measurement error

Limitations and Next Steps

Limitations

- Focus on recent grey literature
- Modeling assumptions

Next Steps

- Include Databases & Journals:
 - Ebsco Host, Jstor, Web of Science
 - POQ, JSSAM, SRM, MDA, JOS, Survey Methodology, Soc. Methods & Res., Field Methods, Survey Practice, etc.

Next Steps *cont.*

- Add Measures:
 - Representativeness, efficiency, samples size, sample type, longitudinal/cross-sectional, sponsorship, number of questions asked, breakoffs, measurement error indicators, etc.
 - Address confounding
 - Address differential rules and regulations (proxy region)
- Improve Modeling:
 - Use of random-effect meta-analytic models
 - Interaction of measures
 - Interaction of error sources

Thank you!

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