Experimentation for Developing Evidence-based Guidelines for Mobile Survey Instrument Design

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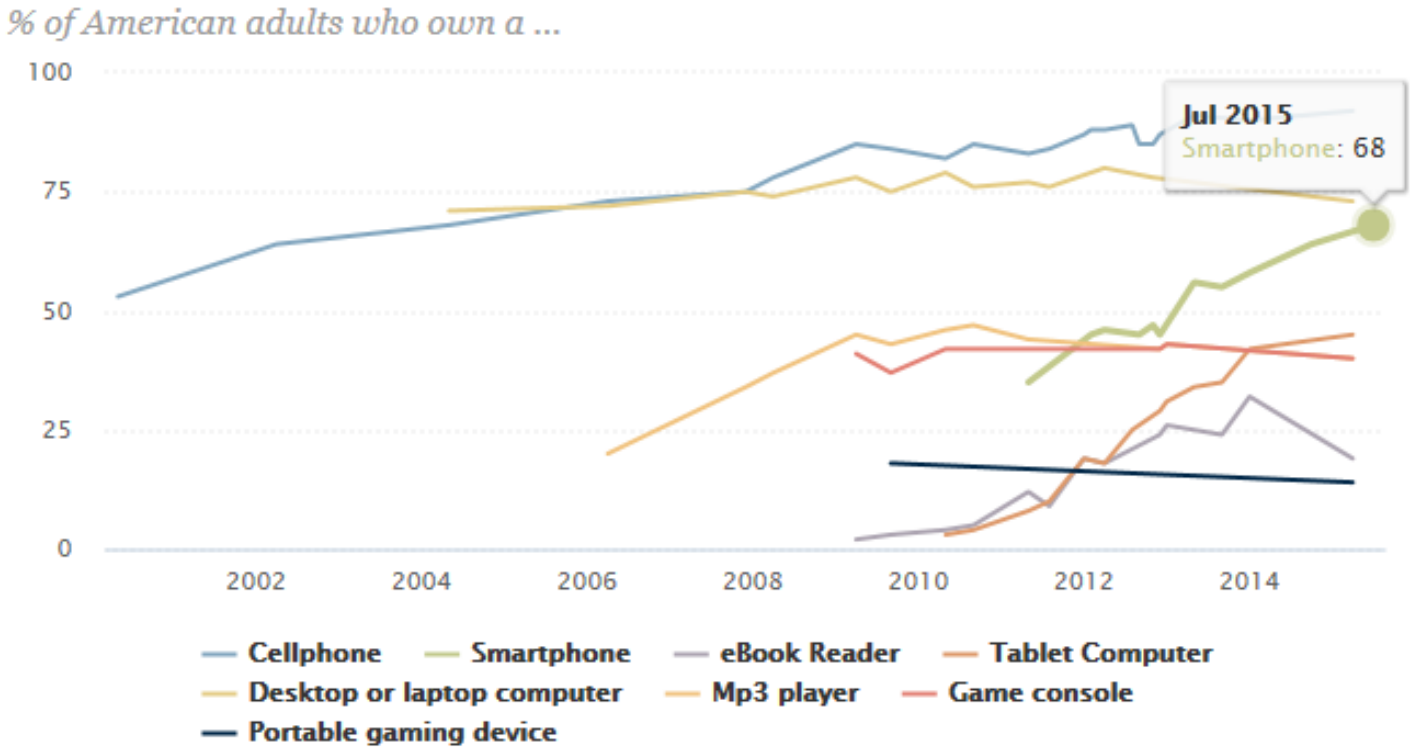
Smartphones Everywhere

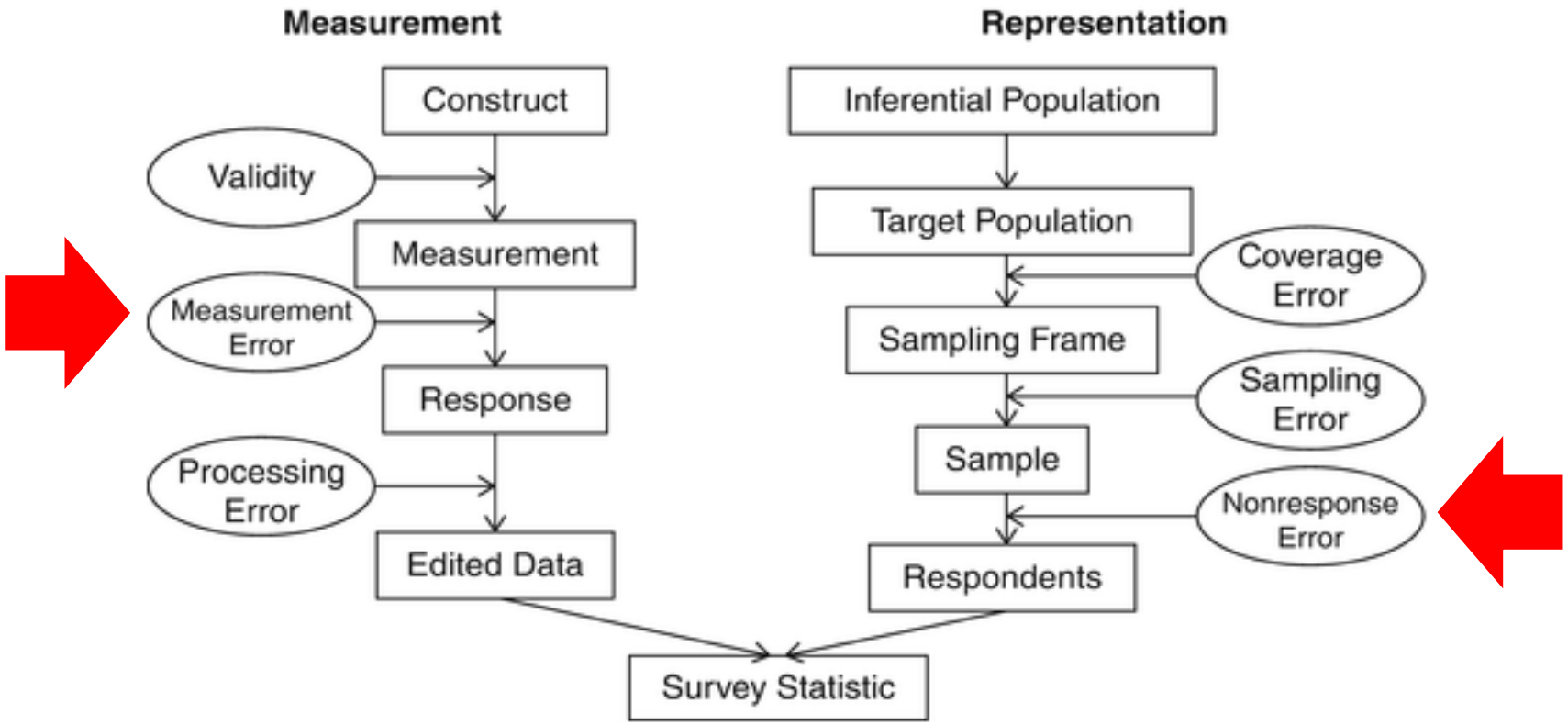


(Pew Research Center. 2015)

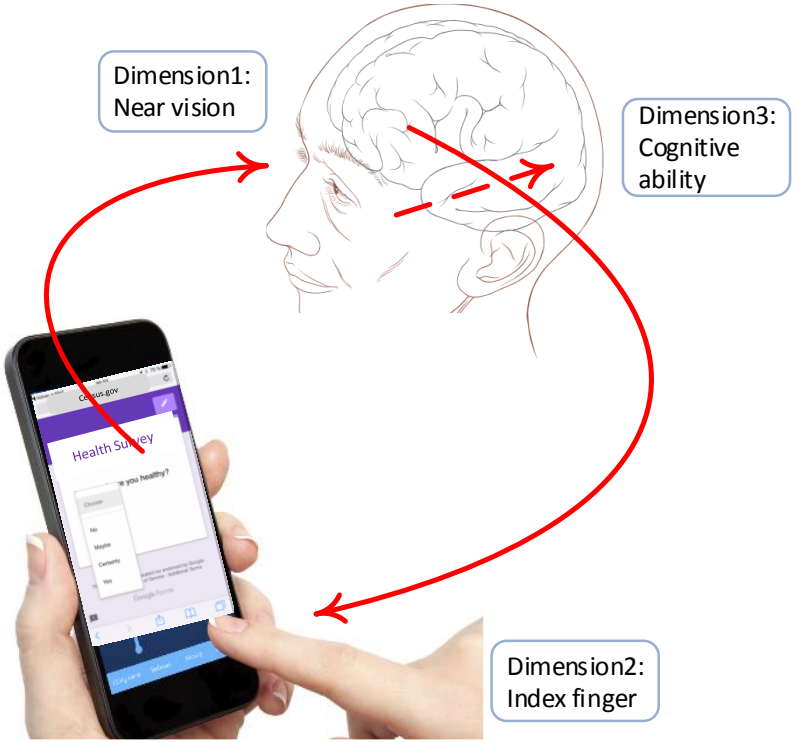
The Challenge

1:15

The Impact on Data Quality



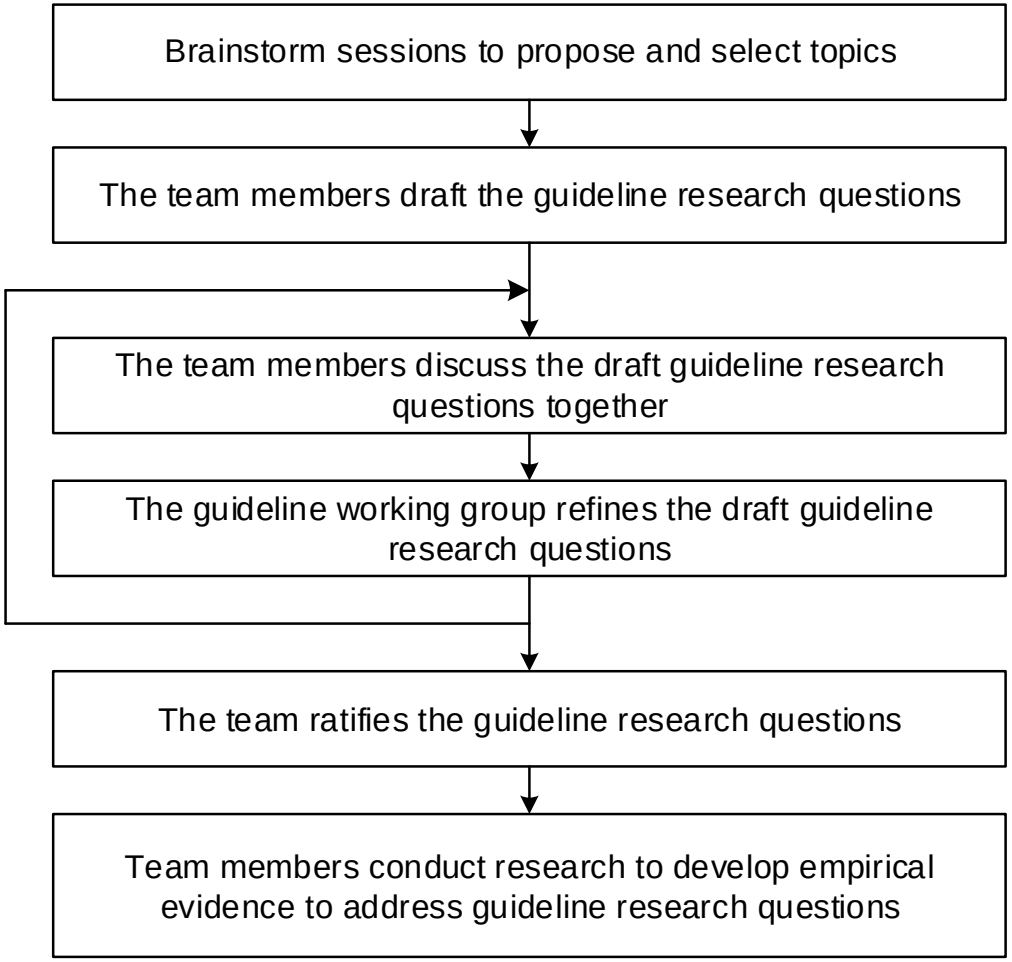
A Human Performance Problem



Evidence-Based Framework of Mobile Survey Instrument UI Design

1. Standards for the basic elements of mobile survey instruments (e.g., touch target size).
2. **Guidelines** for the building blocks of mobile survey instruments (e.g., date of birth format).
3. The standards and guidelines are based on empirical evidence.

A Systematic and Iterative Approach



Guideline Topics

- Pre-question-stem instructions
- Question stem
- Post-question-stem instructions
- Responses
- Post-response instructions

Topic Category	Sample Topic
Question instruction	Layout
Question stem	Text color
Response	Response options orientation
Navigation	Optimal navigation method
Support features	Within-question Help link
General	Text-Field Labeling

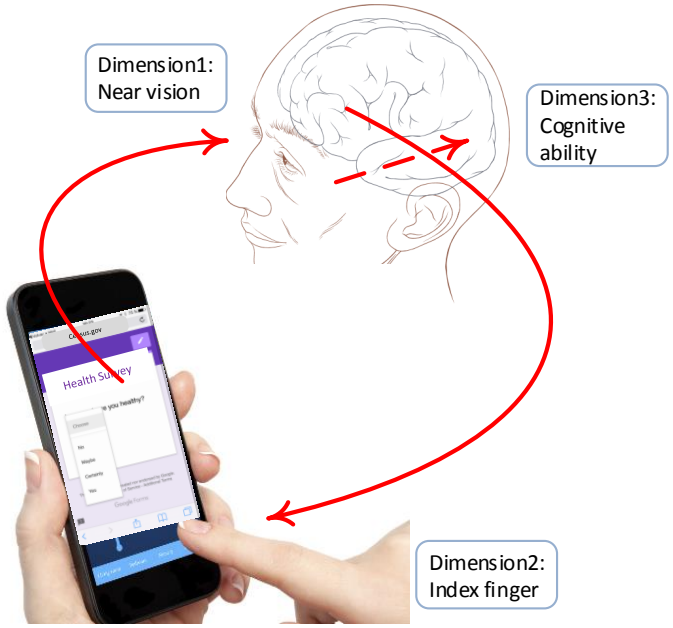
Comparative Outcomes Analysis

Do participants <perform a task> ***more*** *effectively,* ***more*** *efficiently, with* ***better*** *satisfaction <using>* ***<this method> than <other method(s)>?***

Example:

Do respondents enter responses more accurately, faster, with better satisfaction, using a drop-down selection than a text field?

Mobile User Model



Dimension I: Near vision (for reading)	Binocular habitual visual acuity – around 20/20
	Normal contrast sensitivity
	Color blind
Dimension II: Index finger	Index fingertip touch area breadth – 13 mm
	Index finger mobility – not good but able to operate touch screen device
Dimension III: Cognitive ability	Language – fluent in English
	Education – Eighth grade or equivalent

Study Participants Sample

- Age between 60 and 75 years old
- Binocular habitual near-vision around 20/20
- Normal luminance contrast sensitivity
- Education of 8th grade or more
- Fluent in English
- Experience of smartphone use for at least 12 months

Four Experiments

1. Dropdown response options
2. Response options for touch
3. Response formatting for fixed-field data entry
4. Typographic cueing