

Bridging trends spanning HINTS 3: Outline

- Background – Split sample for HINTS 3
- Why does it matter?
- How to account for change in methodology
- Summary

Background – What happened on HINTS 3?

- HINTS 3 administered a dual frame-dual mode survey
 - National random digit dial (RDD) sample administered by telephone
 - National address based sample (ABS) administered by mail
- Why?
 - RDD surveys
 - problems with respect to coverage (cell phones) and lower response rates
 - Increasing costs
 - ABS samples:
 - Better coverage than RDD
 - Some measurement advantages

Why Dual Frame – Dual Mode for HINTS 3?

- It allows users to examine differences between the two modes
 - In many cases, it is possible to conduct trend analyses, once accounting for the switch in the mode
 - Increases robustness of analyses by comparing across modes
- Disadvantages:
 - Introduces decisions on which mode to use
 - Can reduce sample sizes for HINTS 3

Three sets of Weights for HINTS 3

Survey mode	Final sample weight	Replicate weights
RDD Only	rwgt0	rwgt1 thru rwgt50
Mail Only	mwgt0	mwgt1 thru mwgt50
Combined RDD and Mail	cwgt0	cwgt1 thru cwgt50

What are sources of ABS-RDD differences?

- Non-response and coverage differences between the modes
- Measurement differences
 - Presence of an interviewer (on telephone)
 - Different channel of communication
 - Mail survey is visual, self-administered
 - Telephone is oral delivered by an interviewer

Non-response and coverage: Comparison to national benchmarks

- Under-representation, in both frames, of:
 - young
 - minority
 - low education
 - Males

Non-response and coverage analysis: Comparison Between RDD and Address

- Frames are relatively equivalent along age, race, gender, education and income
- Mail under-represents Hispanics (no Spanish version of the questionnaire)
 - Spanish speakers were asked to call into the telephone center to complete the interview
 - Only 11 individuals did this
- Telephone does not include the cell-only population
 - About 15% of populations was cell-only at the time of HINTS 3

Weights adjust for non-response and coverage

- Weights include adjustments for demographics, ever having cancer and health insurance status
- Weights do not fully compensate for
 - Under-representation of Hispanics on mail survey. Spanish speaking Hispanics may be different from those that filled out English questionnaire.
 - Lack of coverage of cell-only on telephone. Cell-only individuals are different from those with a landline, even after controlling for demographic characteristics (Han and Cantor, 2008)

Measurement advantages of each mode

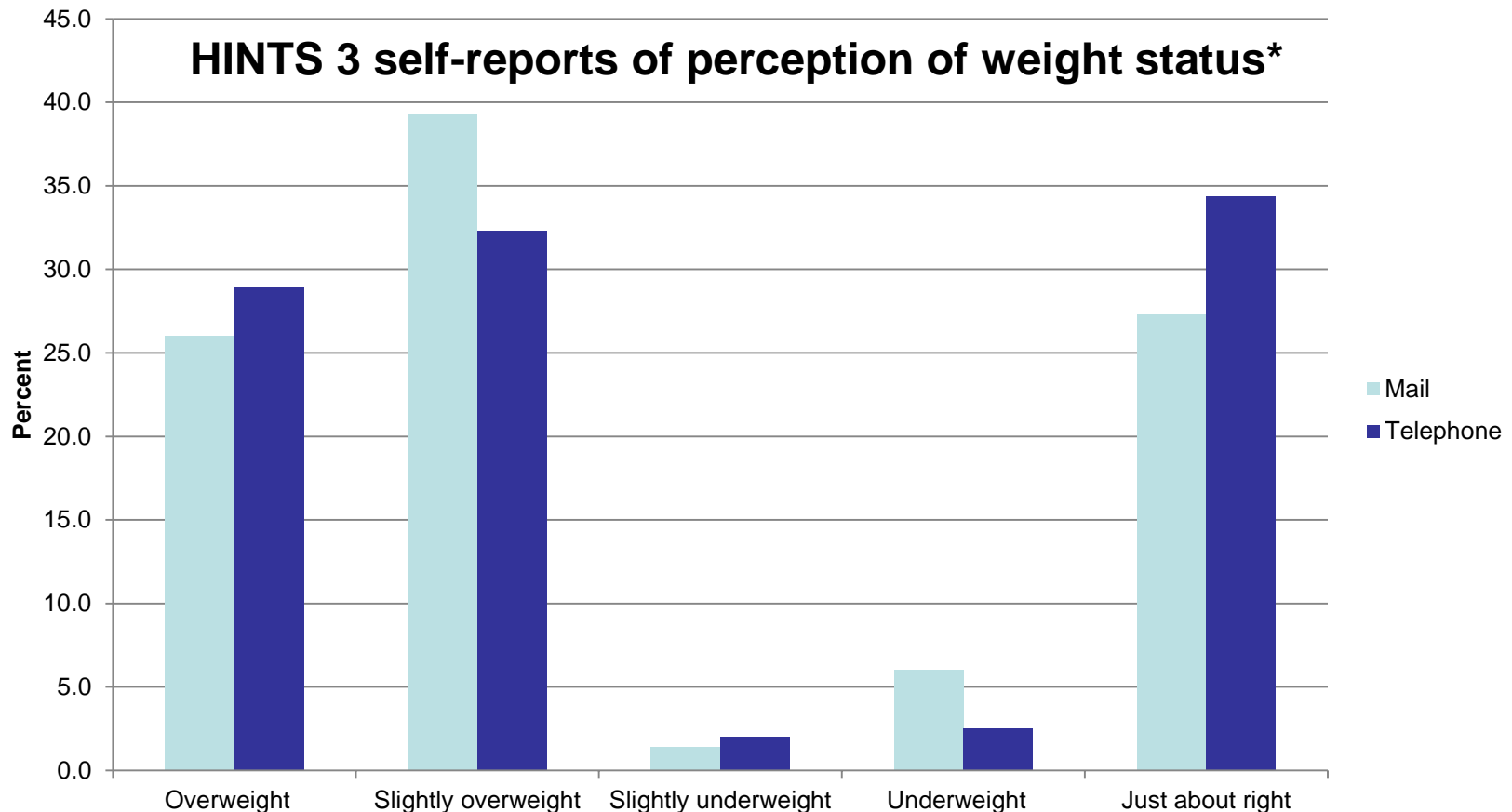
Mail Survey

- Fewer social desirability effects
- Reduced context
- Aided recall and/or reporting (cues)
- Fewer primacy/recency effects

Telephone Survey

- Less missing data
- Interviewer can answer questions (complicated definitions)
- Unaided recall and/or reporting

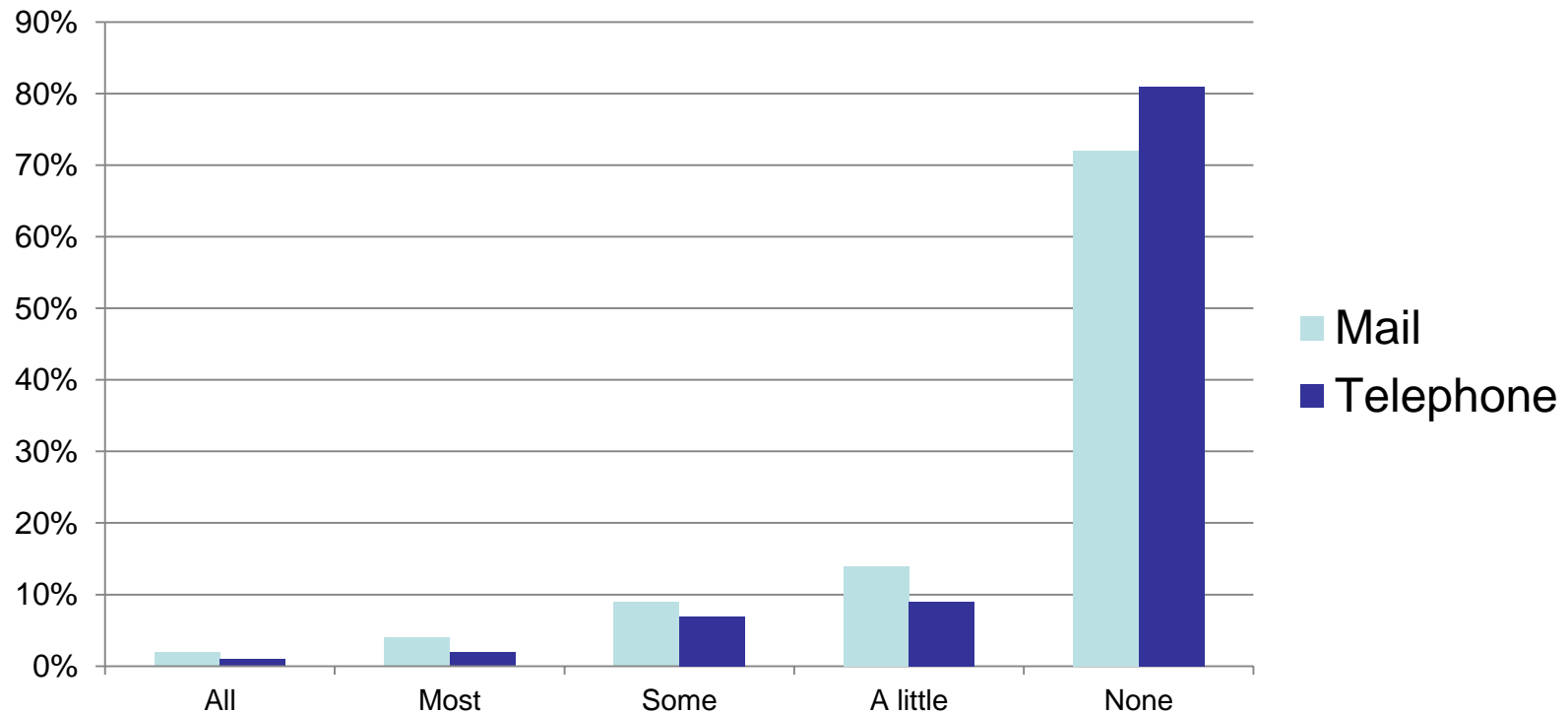
Example of Sensitive Question



*Difference between distributions statistically significant at $p < .01$

Another example of a sensitive question

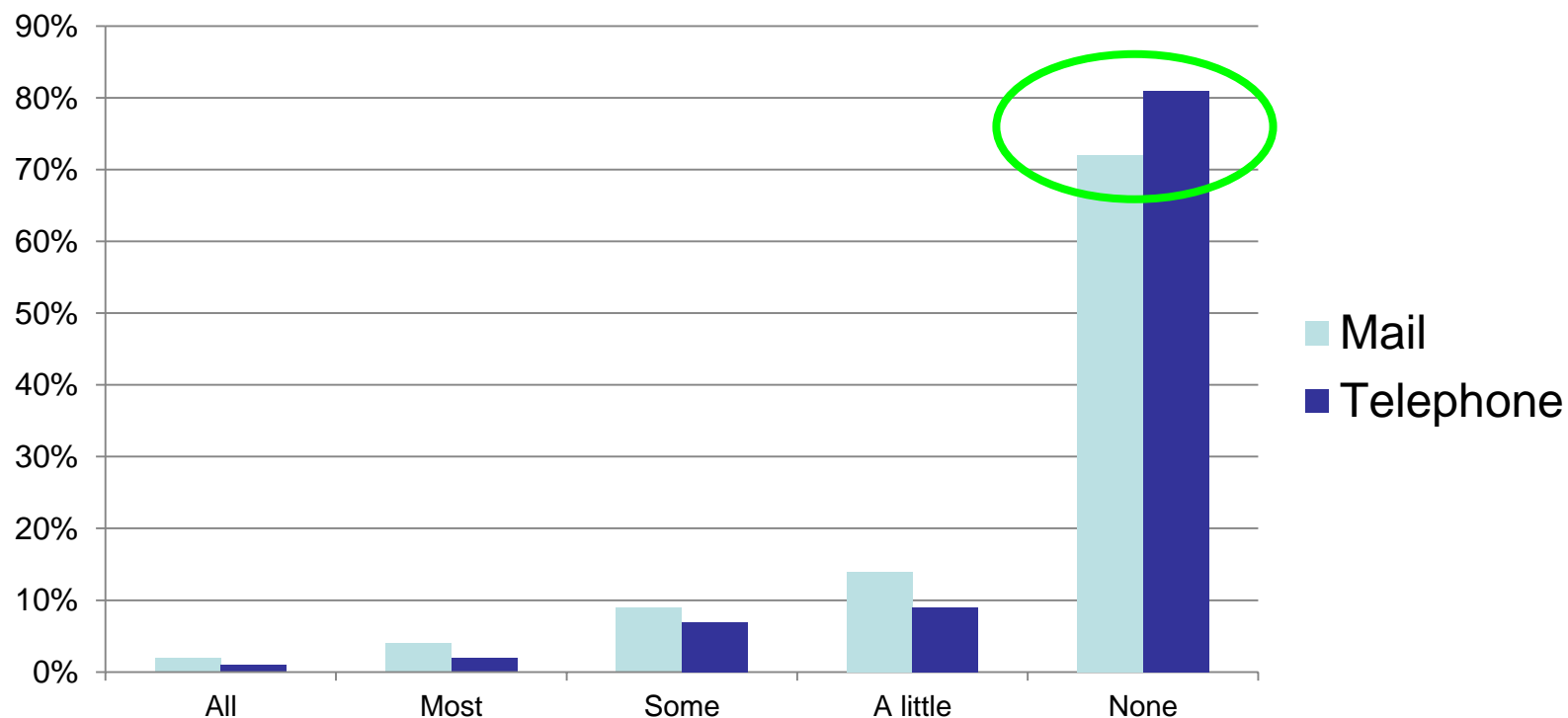
During the past 30 days, how often did you feel worthless?*



* Significant at $p < .01$

Another example of a sensitive question

During the past 30 days, how often did you feel worthless?*



* Significant at $p < .001$

Aural vs Visual Stimuli: Seeing ahead on the Mail survey

Section A Seeking Information about Health

A1. Have you ever looked for information about health or medical topics from any source?

HC01SeekHealthInfo 0018

- Yes
- No → **Go to Question A6**

A2. The most recent time you looked for information about health or medical topics, where did you go first?

HC02WhereSeekHealthInfo 0019-0020

Mark only one.

- | | |
|---|---|
| <input type="checkbox"/> Books | <input type="checkbox"/> Magazines |
| <input type="checkbox"/> Brochures, pamphlets, etc. | <input type="checkbox"/> Newspapers |
| <input type="checkbox"/> Cancer organization | <input type="checkbox"/> Telephone information number |
| <input type="checkbox"/> Family | <input type="checkbox"/> Complementary, alternative, or unconventional practitioner |
| <input type="checkbox"/> Friend/co-worker | <input type="checkbox"/> Other → <i>Please specify below:</i> |
| <input type="checkbox"/> Doctor or health care provider | |
| <input type="checkbox"/> Internet | |
| <input type="checkbox"/> Library | |

HC02WhereSeekHealthInfo_OS
0021-0070

Aural vs Visual Stimuli: Seeing ahead on the Mail survey

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Mail: 77% looked for information

Telephone: 61% looked for information

Aural vs Visual: Ordinal scales

- Likert

- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

- Evaluation scale

- Excellent
- Very good
- Good
- Fair
- poor

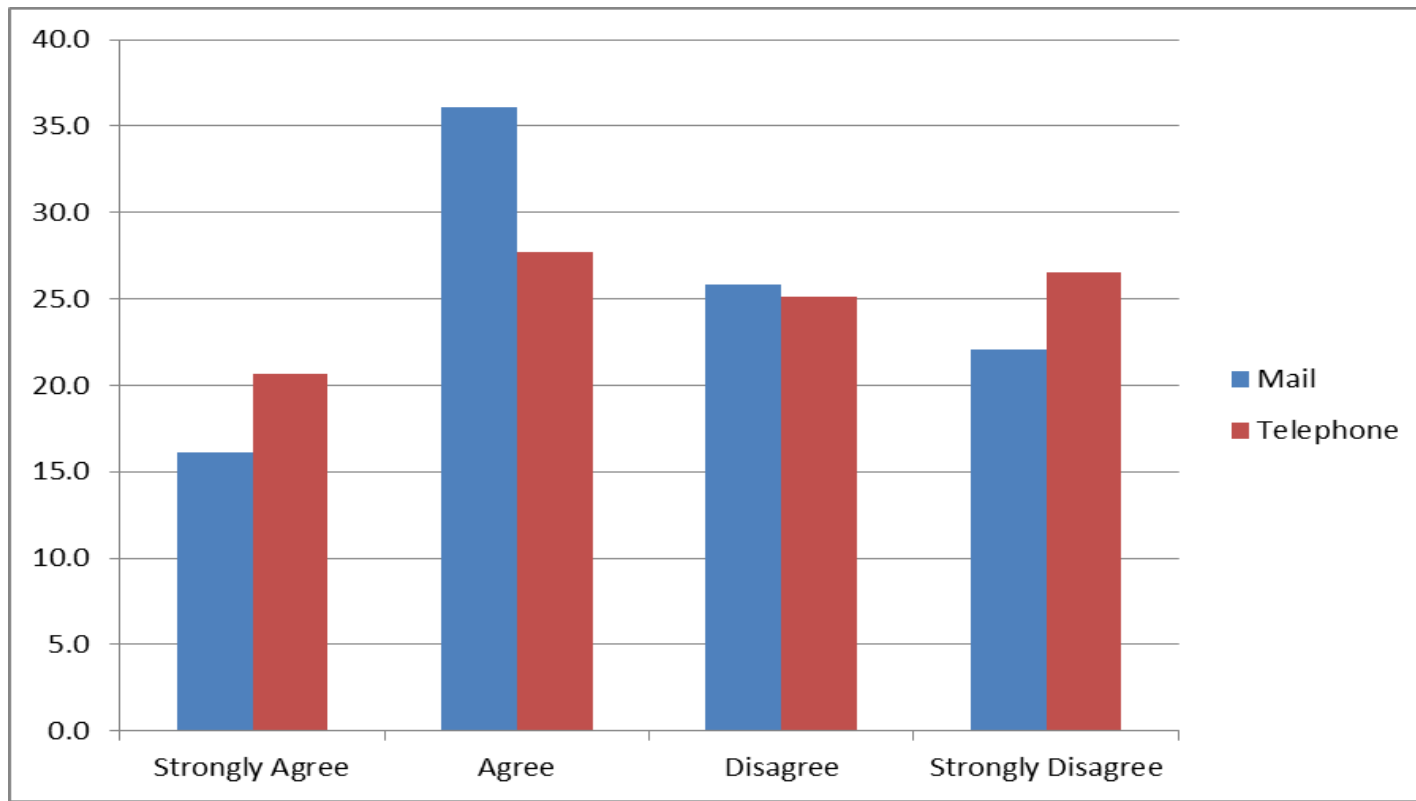
- Frequency

- Always
- Usually
- Sometimes
- Never

- A lot
- Some
- A little
- Not at all

Ordinal scales and extreme answers

Based on most recent search about health or medical topics: You were concerned with the quality of the information*



*Difference between distributions statistically significant at $p < .01$

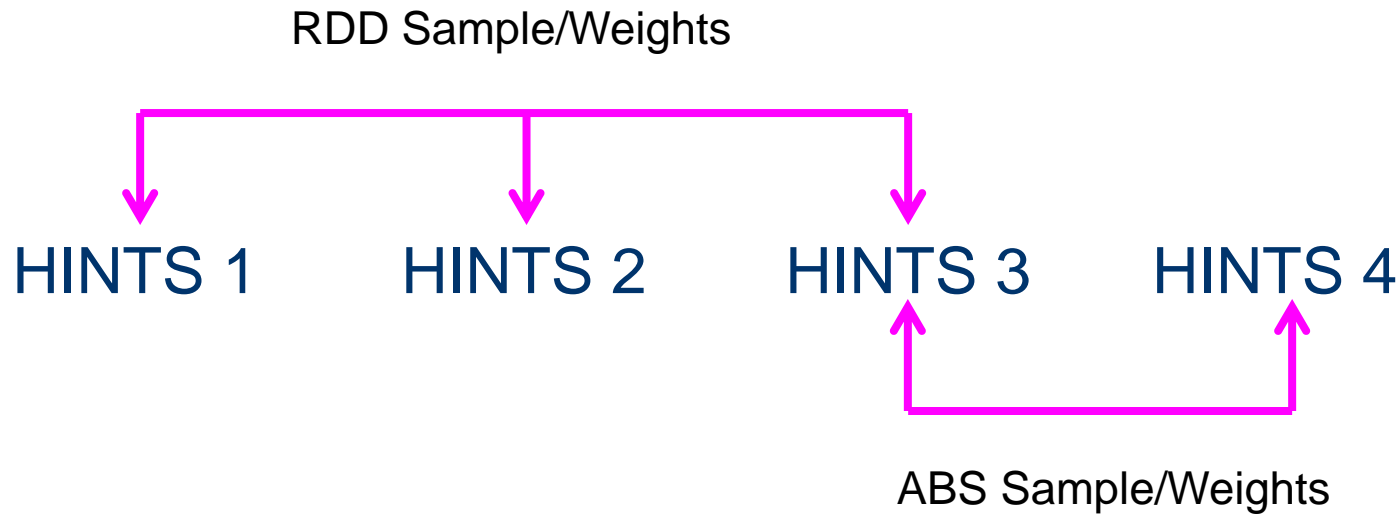
Other examples of differences in measurement

- Number of Don't Know responses:
 - Interviewer did not read DK
 - Mail survey did not list DK responses
 - Example: Question on sunlight(D16 – mail; BR-16 telephone)
- Open vs. closed ended questions
 - Mail survey provides cues on ranges
 - Mark-all-that apply questions
- Bottom line: Need to test to see if there are differences between the modes
 - Understanding why there is a difference may help if you need to select a mode

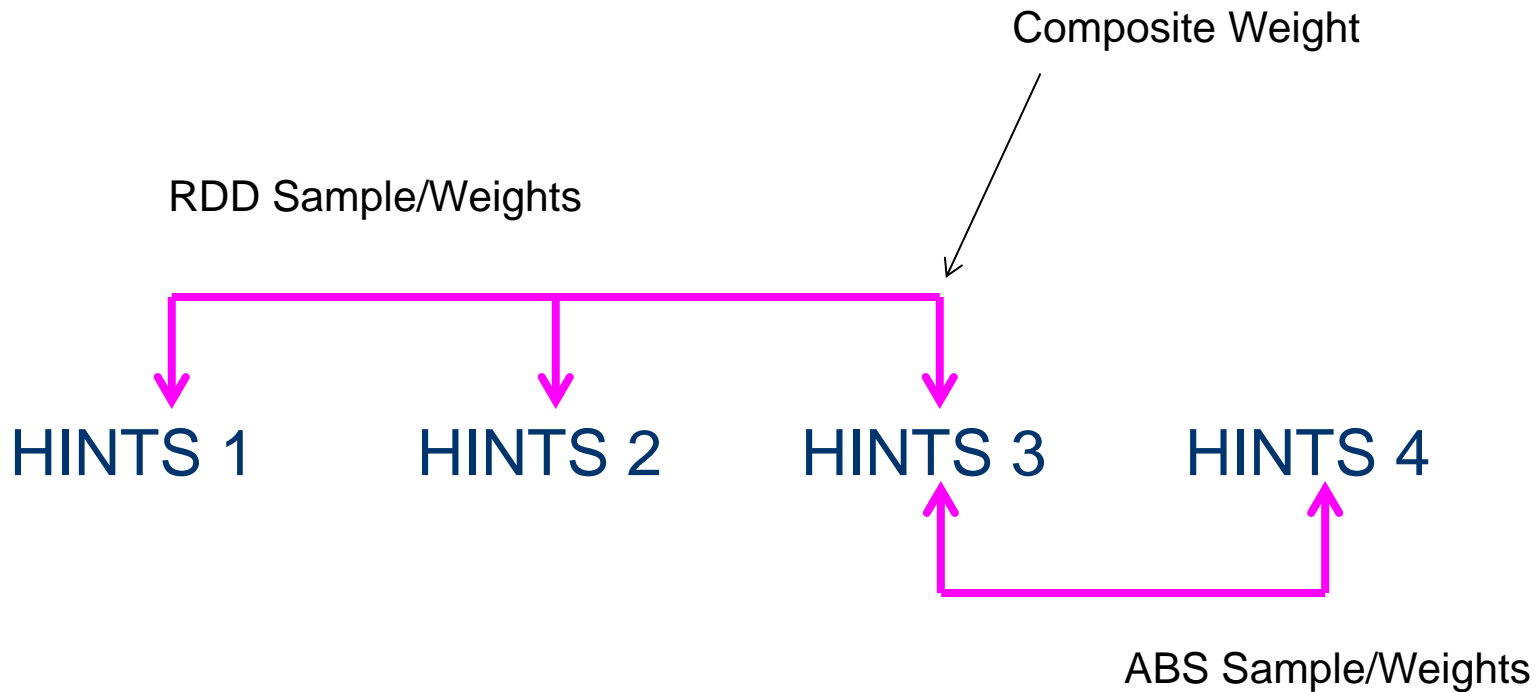
Deciding on which mode to use

1. Compare estimates for the ABS and RDD frames
2. If there is not a difference, then use composite weights
3. If there is a difference, then:
 - a. Select use RDD weights, and/or
 - b. Conduct analysis both ways

Estimating Trends Cross HINTS 3: Difference in Mode



Estimating Trends Crossing HINTS 3: NO mode difference



What is the difference in estimates? Example: Internet Use

	Phone	Mail	Comp
% using internet	66%	71%	69%
Standard error	1.1%	.9%	.65%

Significant difference on Internet Use

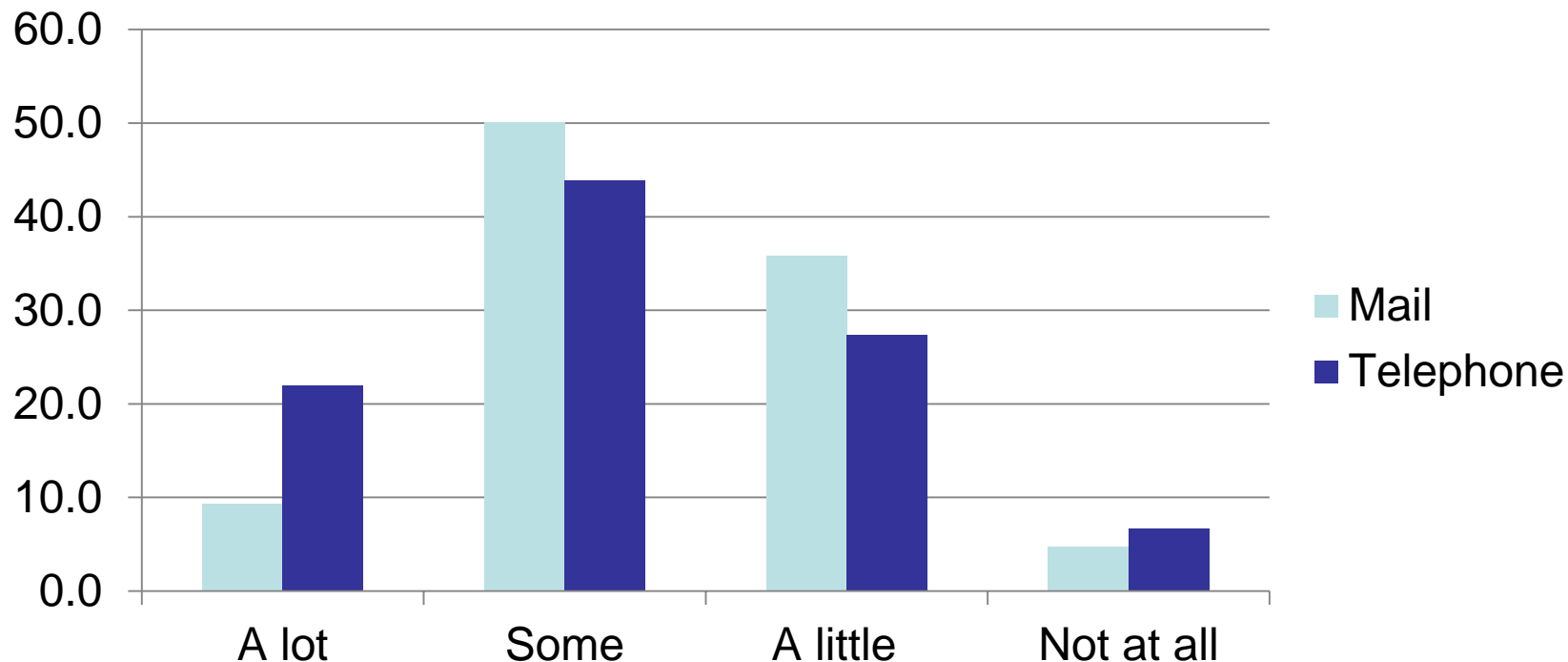
	Phone	Mail	Comp
% using internet	66%	71%	69%
Standard error	1.1%	.9%	.65%

Diff = 5%

Is the difference meaningful?

	HINTS 1	HINTS 3	Diff
Telephone	61%	71%	10%
Combined	61%%	69%	8%

Example of big difference: “Trust” family members*



* Difference significant at $p < .001$

What if difference is 'too big'

% trust family members a lot

	Mail	Phone	Comp
% trust 'a lot'	9.3%	22%	15.5%
Standard error	.6%	.9%	.6%

- It is possible to bridge:
 - Tel: HINTS 2 vs 3 = 1% difference
 - Mail: HINTS 3 vs 4 = 2% difference
- But the percentage difference is much different. Do they mean different things?
- In this case can combine 'a lot' and 'some' categories:
 - Tel HINTS 3 = 66%
 - Mail HINTS 3 = 59%
- If combining categories, no change across iterations, regardless of mode combination

Summary – Accounting for change in methodology on HINTS 3

- Four basic steps
 - Compare results by frame
 - If there is not a meaningful difference, use combined sample
 - If different:
 - Consider collapsing categories
 - Use RDD weight if collapsing categories is not an option
- Cannot formally account for change in methodology if the variable was not included on HINTS 3.
 - Need to draw on measurement theories about whether the change in methodology needs to be considered



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Thank-you

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