



Grouped vs. Interleafed Questions and Specific vs. Global Questions to Improve the Accuracy of the Census Questionnaire

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Overview of Paper

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2020 Census Coverage Study

- Census Bureau is exploring the use of mobile and web-based modes to improve coverage and reduce costs
- Study evaluating new streamlined test versions of paper and mobile census forms for the 2020 Census
- RTI International contracted to conduct pretesting of the new census forms
- Study utilizes an iterative approach to cognitive and usability testing

Challenge of Collecting Good Addresses

- Census residency rule: “**Count people at their usual residence, that is, where they are usually living and sleeping, on census day**” (National Research Council, 2006)
- People’s understanding of “usual residence” may differ from Census, therefore forms ask about alternate addresses
- Past research has shown that underreporting of alternate addresses is common (Childs, et al., 2009)

Approach Used in Round 1

Question 10
Does anyone sometimes live or stay somewhere else with a parent, grandparent or other person?

Yes
 No

Next Page

Question 10L
Click the names of the people who stay somewhere else.

Person A

Person B

Next Page

Question 10F
Please provide the full address of the other place Person A stayed.

Address (Number and street name)
[Redacted]

City
[Redacted]

State
[Redacted]

Zip Code
[Redacted]

Findings from Round 1

Question 10

Does anyone sometimes live or stay somewhere else with a parent, grandparent or other person?

- Yes
 No

Next Page

Question 10L

Click the names of the people who stay somewhere else.

Person A

Person B

Next Page

- Consistent with past research, there was strong evidence of underreporting alternate addresses
- “Does anyone” was vague and did not adequately convey the concept of “household” particularly for unrelated or tenuously attached
- Providing addresses on smartphones and tablets was tedious, and it is possible that people learned to say “no” to avoid providing an address

Research Question for Round 2

- Would a different approach to requesting the information be more effective in obtaining alternate addresses?
 - Global versus Specific
 - Concepts that are intuitive yet complex (e.g., “household”) are often not understood correctly by respondents (Conrad and Couper, 2004)
 - Respondent understanding “household” may differ from Census, resulting in less accurate answers than asking about the concept more specifically
 - **Global:** *Does anyone in the household sometimes live or stay...*
 - **Specific:** *Does Person 1 sometimes live or stay...*
 - Grouped versus Interleaved
 - Asking filter questions before more detailed follow-up questions can elicit more “yes” responses (Kreuter, McCulloch, Presser, & Tourangeau, 2011)
 - **Grouped:** *Does anyone live or stay in place A?*
 - **Interleaved:** *Do you live or stay in place A?*

Study Approach

- Evaluated using a test version of the new Household Census instrument
- Round 2 used two versions:
 - Version 1 (V1): Global and Grouped (18 cases)
 - Version 2 (V2): Specific and Interleafed (18 cases)
- Conducted cognitive and usability testing to evaluate which version performed better compared to Round 1 (38 cases)

Version 1: Global and Grouped

Filter Questions

Question 10
 Do you or any of these people sometimes live or stay somewhere else with a parent, grandparent, friend or other person?
 Yes
 No
 Next Page

Question 10a
 Do you or any of these people sometimes live or stay at another home, like a seasonal or second residence?
 Yes
 No
 Next Page

Question 10b
 Do you or any of these people sometimes live or stay at another address for college, for the military, or for a job?
 Yes
 No
 Next Page

Follow-up Questions

Question 10F
 You reported that before Person 2 stayed someplace else with a parent, grandparent, friend or other person. What is the address of the other place Person 2 stayed?
 Address (Number and street name)
 Apt #
 City

 State

 Zip Code

Version 2: Specific and Interleaved

Question 10
 Do you sometimes live or stay somewhere else with a parent, grandparent, friend, or other person?

Yes
 No

Next Page

Question 10F
 What is the full address of the other place Person 1 stayed?

Address (Number and street name)

City

State

Zip Code

Question 10
 How about Person 2? Does Person 2 sometimes live or stay somewhere else with a parent, grandparent, friend, or other person?

Yes
 No

Next Page

Question 10
 How about Person 3? Does Person 3 sometimes live or stay somewhere else with a parent, grandparent, friend, or other person?

Yes
 No

Next Page

Question 10F
 What is the full address of the other place Person 3 stayed?

123 Main St
 Enter a new address

Next Page

Cognitive/Usability Findings

- V1 (Global and Grouped) had more Yes responses (33 vs. 24), but fewer unique addresses (15 vs. 26)

Question 10
 Do you or any of these people sometimes live or stay somewhere else with a parent, grandparent, friend or other person?

Yes
 No

**Does anyone...
 Who...
 Does anyone...
 Who...
 Address...**

Next Page

Question 10
 Do you sometimes live or stay somewhere else with a parent, grandparent, friend or other person?

Yes
 No

**Does Person 1...
 Address...
 Does Person 2...
 Address...**

Next Page

V1: Global and Grouped

- Participants found V1 to be confusing due to distance between gate and follow up question

V2: Specific and Interleaved

- Participants found V2 to be easier, but long and burdensome

Discussion of Findings

- While grouping the gate questions did appear to produce more Yes responses, it did not yield more unique addresses
- Likely due to components of the Response Process
 - Comprehension, Retrieval, Judgment, Response (Tourangeau, Rips, Rasinski, 2000)
 - Specifically, “Response” consists of a) mapping judgment to response category, and b) editing response as appropriate
- Once participants learn that an address is required, they edit their response – editing occurs earlier V1 than V2

Future Directions

- Based on the findings, for Round 3 we plan to:
 - Use interleaved design (*asking for addresses immediately*) because it was less confusing to respondents and answers were more consistent
 - Switch to person-based approach rather than topic-based approach (i.e. ask about each householder individually, but group all locations)
 - Research suggests this works better for unrelated household members (Conrad and Couper, 2004)
 - Less burdensome than asking about each location individually
- Experimental testing of grouped vs. interleaved methods should be explored during field tests of the 2020 census to verify which approach is more accurate

Questions?

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