

Respondent Opinions of Previously Reported Data in Web Surveys



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Introduction:

- Respondents' answers on surveys they have previously completed are often referred to as 'previously reported data' or PRD.
- PRD is sometimes used to aid in the conduct of a current survey, often in an effort to increase data quality and reduce respondent burden.
- Using PRD in surveys has been extensively researched, and has been shown to have both positive and negative impacts to measures of data quality and burden.
- However, most often these studies focus on objective measures, and subjective measures of respondent perceptions of their total experience are largely missing, especially in web surveys.
- Therefore, in this presentation data from an experiment asking respondents about their burden perceptions when PRD is used in a web survey will be shared.

Background

- The Census of Agriculture (COA) is one of the most important data collections conducted by the National Agricultural Statistics Service (NASS).
- The COA takes an estimated 50 minutes to respond on average.
 - Thirty-six sections of questions, multiple questions per section
 - Questions range from simpler (e.g., type of agricultural activity) to more complex (e.g., financial calculations of asset values and expenses).
- Pick and colleagues (2018) found some common themes in a qualitative study about how NASS can better serve their survey population.
Respondents said:
 - Make questions easier to answer
 - Use data I have already provided to NASS

Background (cont.)

- Therefore, to better serve the NASS survey population, a team was formed to experiment with PRD in the COA.
 - Goal: to see if including PRD could improve the respondents experience and reduce their burden.
- The reasons to use PRD are well-established.
 - Can improve data quality, enhance data collection efficiency (Jackle 2006),
 - Reduce objective measures of burden (i.e., response times) (Holmberg 2004).
- Reducing respondent burden is a desirable feature of PRD.
 - A common grievance is having to answer many of the same questions survey-to-survey even though circumstances have not changed (Hoogendoorn 2004).

Background (cont.)

- Why might the COA a good candidate for PRD?
 - Many questions on COA are also asked on other NASS surveys throughout the year.
 - Response to the COA is critically important, therefore providing PRD is an attempt to reduce frustration, reduce burden, and make responding as appealing as possible.
- Does providing PRD actually make surveys easier for respondents?
 - Mathiowetz and McGonagle (2000) argue that providing PRD can:
 - Help with question comprehension by anchoring to previous response;
 - Support R's memory with cognitively easier task of recognition as opposed to recall;
 - Help R's form a judgment about the proper response that should be given.
 - Given these factors, and that R's can simply verify if PRD is correct or update if necessary, respondent burden may be reduced (Holmberg 2004).

Purpose of this Study

- Not much attention has been given thus far to measuring or evaluating respondents subjective perceptions of PRD's impact on their total response experience.
- Most studies focus on objective outcomes. Some important studies include:
 - Jackle and Eckman (2020) on optimizing data quality when PRD is used in data collection;
 - Jackle (2008) and Holmberg (2004) on reducing response times with PRD.
- Measuring respondent perceptions of PRD still remains an important area of exploration.
- To help fill this gap, results from a novel set of questions designed to assess respondent attitudes toward PRD in the COA are presented.

Research Questions

- The literature has argued that PRD can reduce burden by making response easier and faster.
- Additionally, at NASS, qualitative data suggested PRD use is desired by the survey population.
- Therefore, three questions will guide the remainder of this presentation:
 1. Do respondents perceive that PRD made it easier to complete the COA?
 2. Do respondents perceive having completed the survey faster with their PRD being present?
 3. Do respondents have a positive reaction overall to their PRD being used in the COA?

Data

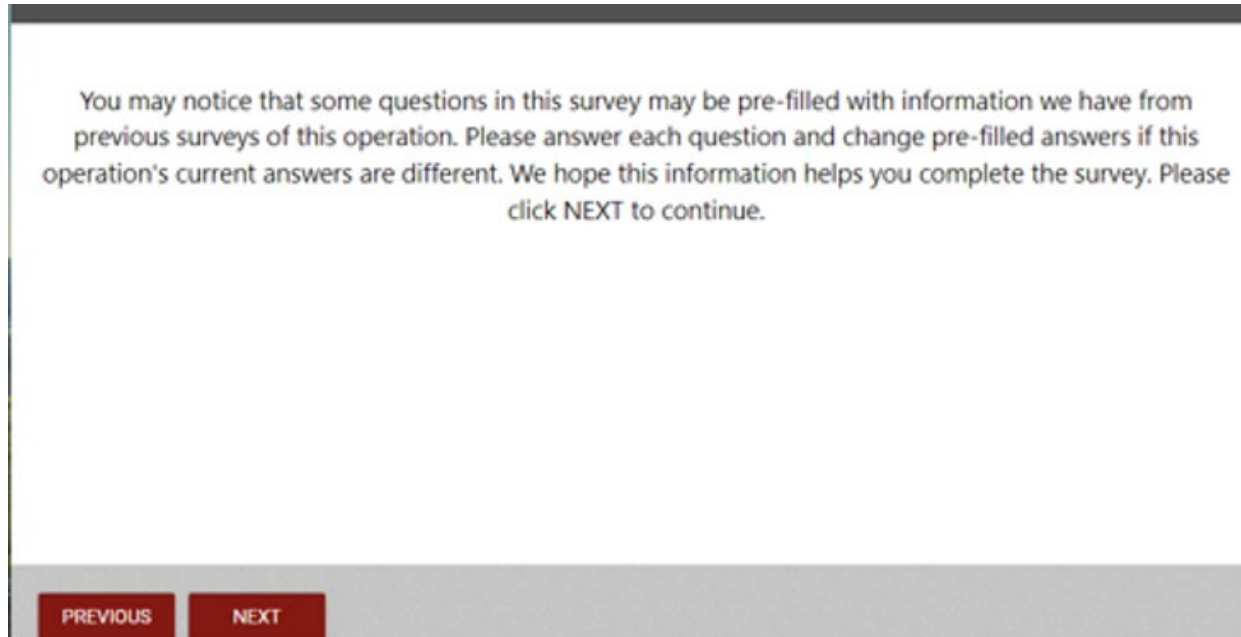
- The data comes from the 2020 COA Content Test.
 - Occurs two years before the actual COA
 - Allows NASS an opportunity to evaluate the methods and data quality of the COA before its rollout, and conduct experiments such as utilizing PRD.
- Population of interest for the PRD experiment was all agricultural operations on NASS's sample frame with PRD that could be used on the COA.
- Stratified random sample of $n=9,000$ was selected from the PRD population of $N=267,111$.
- Stratified random assignment placed $n=6,016$ into an experimental group that had their PRD used in their web form. ($n=2,984$ in the Control).

Methods

- All respondents with PRD in their web mode were made aware their PRD was being used on the introductory screen to the web version of the COA Content Test.
- Additionally, on each page within the web survey where PRD was present, respondents received a message at the top of the page highlighting PRD use.
- After completing the Content Test, respondents were asked to rate their level of agreement with a set of statements designed to gauge their overall perception of PRD's impact on their experience.

Methods (cont.)

- Web survey introductory page for those in the experiment who had their PRD used on the Content test:



Methods (cont.)

- Example of message at the top of a survey section where PRD is prefilled.

Some questions on this screen may be pre-filled with information we have from previous surveys of this operation. Please answer each question and change pre-filled answers if this operation's current answers are different.

Report land owned, rented, or used by you, your spouse, or by the partnership, corporation, or organization named on the letter you received.

INCLUDE all land, regardless of location or use – cropland, Conservation Reserve Program (CRP) and Wetlands Reserve Program (WRP) land, pastureland, rangeland, woodland, idle land, farmsteads, etc.

1. Number of acres OWNED?

None Acres

2. Total number of acres RENTED or LEASED **FROM** OTHERS?

INCLUDE

- land worked by you on shares
- land used rent free in exchange for services, payment of taxes, etc.
- Federal, state and railroad land leased on a per acre basis
- land rented or leased by you for cash

EXCLUDE land used on a fee per-head or animal unit month (AUM) basis.

None Acres

Methods (cont.)

- To gauge R's perceptions of PRD's use in their web forms, we asked them to rate their level of agreement with a set of statements at the conclusion.
- The lead-in to this set of statements read:
 - “Before submitting your data, please provide your opinions about pre-filled information used in some answer cells in this survey. If you do not wish to provide your opinions, please scroll to the bottom and press ‘next.’”
 - 5-point scale, where 1=Strongly disagree; 5=Strongly agree. A sixth option “Don't know” was also included.
- The responses to the following statements will be analyzed here:
 - “The prefilled information made it easier for me to complete the survey.”
 - “The prefilled information helped me finish the survey faster.”
 - “Overall, I have a positive reaction to prefilled information being used in the survey.”

Methods (cont.)

- For this paper, the three research questions posed earlier:
 1. Do respondents perceive that PRD made it easier to complete the COA?
 2. Do respondents perceive having completed the survey faster with their PRD being present?
 3. Do respondents have a positive reaction overall to their PRD being used in the COA?
- Will be assessed by the response distributions to the agreement statements on the previous slide:
 - “The prefilled information made it easier for me to complete the survey.”
 - “The prefilled information helped me finish the survey faster.”
 - “Overall, I have a positive reaction to prefilled information being used in the survey.”
- Response distributions are calculated using PROC SURVEYFREQ in SAS 9.4
 - Incorporates the sample design and nonresponse information is used in the production of frequency estimates and their Taylor-series linearized standard errors.

Results: Research Question 1

- RQ1: Do respondents perceive that PRD made it easier to complete the COA?
 - **Result: ~two-thirds perceive that PRD made it easier to complete the survey.**
- Of the n=2,535 responses to the statement “The prefilled information made it easier for me to complete the survey”:
 - **50.2% (standard error 1.7%) Strongly agree.**
 - **18.3% (1.3%) Agree.**
 - 11.9% (1.1%) selected the middle option.
 - 2.9% (0.6%) Disagree.
 - 3.9% (0.7%) Strongly disagree.
 - 12.8% (1.2%) Don't know.

Results: Research Question 2

- RQ2: Do respondents perceive having completed the survey faster with their PRD being present?
 - **Result: ~two-thirds perceive that PRD helped complete the survey faster.**
- Of the n=2,531 responses to the statement “The prefilled information helped me finish the survey faster”:
 - **48.5% (1.7%) Strongly agree.**
 - **16.9% (1.3%) Agree.**
 - 13.4% (1.2%) selected the middle option.
 - 4.1% (0.7%) Disagree.
 - 4.5% (0.7%) Strongly disagree.
 - 12.6% (1.2%) Don't know.

Results: Research Question 3

- RQ3: Do respondents have a positive reaction overall to their PRD being used in the COA?
 - **Result: Nearly three-quarters perceived PRD use in their surveys positively overall.**
- Of the n=2,536 responses to the statement “Overall, I have a positive reaction to prefilled information being used in the survey”:
 - **49.8% (1.7%) Strongly agree.**
 - **21.7% (1.4%) Agree.**
 - 13.1% (1.2%) selected the middle option.
 - 2.5% (0.5%) Disagree.
 - 1.6% (0.4%) Strongly disagree.
 - 11.3% (1.1%) Don't know.

Discussion

- The results seem to suggest that PRD resulted in the perception of easier and faster experiences for most respondents.
 - Bradburn (1978) argues that perceived burden may be as important as objective burden on response outcomes.
- However, a non-ignorable portion (~one-third) did not agree that their experience was easier or faster with PRD.
 - Why, and how does this impact an organization's decision to use or not use PRD?
 - Does the metadata of the PRD (the age and amount used) play a role?
 - Preliminary results from a Rao-Scott design-adjusted test of independence found a significant association between Age+Amount of PRD and agreement that the survey was easier to complete. This was not the case for the other two statements, however.

Conclusion

- There is a plethora of research on objective outcomes when PRD is used, and this research helps provide some insight into lesser examined subjective point-of-view of the response experience when PRD is used.
 - An area that so far is under-examined, and ripe for further research.
- Limitations and Future Research:
 - Agreement statements limit what can be inferred or meant by the answers, especially for those that disagreed.
 - Fowler (1995) and Dykema et al. (2022) recommend item-specific scales over agreement scales for measuring subjective states.
 - PRD may be useful to the extent that it is stable and relevant over time, which may impact respondent perceptions of burden. Items can experience change over time more quickly (e.g., livestock inventory) and others more slowly (e.g., acres owned).
 - Recommend developing item-specific indicators of stability to provide greater insight into burden perceptions.

Thank you!

- To follow-up, contact Joseph.Rodhouse@eia.gov.