

Financial record checking in surveys:

Do suggestive prompts improve data quality?

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The problem with self-reports

- Self-reports of financial information in surveys, such as income and assets, are particularly prone to inaccuracy
 - difficulty reporting income because they cannot recall the information being requested and use
 - faulty estimation strategies (Moore et al., 1999)
- Retrieval mechanism, and ultimately data quality, may be improved by respondents accessing financial records in reporting income and assets

Prompting the respondent to access records

- Ask respondents to have copies of their bank statements on hand for the interview for easy reference and retrieval of the correct information
 - error mitigated by bypassing memory retrieval through the use of records
 - better quality data can be collected with little risk to respondent cooperation (Moon and Laurie, 2010)

Past research on prompting for record checking

- Couper et al. 2013 found encouraging respondents to consult records in a web survey increased record checking significantly (from 46% to 55%)
 - but not sufficient to change estimate precision
 - group asked to check records had a slightly lower response rate than those not asked to check records (77% vs. 80%)

CAPI / CATI Experiment: Community Advantage Panel Survey

- Annual (since 2003) longitudinal survey of low- to moderate-income (LMI) homeowners and renters
- Captures the experiences of households and assesses the pros and cons of homeownership for LMI households in the United States
- Not a general population survey but CAPS respondents reflect the LMI population with respect to income and race/ethnicity (Riley et al. 2009)
- Primary goal to measure wealth differences between homeowners and renters

CAPI / CATI Experiment: Community Advantage Panel Survey

- Wealth-and-assets data noisy because values change frequently and reporting requires recalling a number of different sources
- Multimode (CAPI / CATI) experiment in 2012 asking random half to check financial records
- Prompt to consult financial records during survey (recent bank statements, mortgage statements, school and car loan statements, retirement accounts, and insurance policies)

Hypotheses

1. Those asked to prepare records for the interview **will not respond at the same rate as** those not asked to prepare records.
2. Among those who respond to the survey, those encouraged to check records **will do so at a significantly higher rate** than those not encouraged.
3. Those asked to check records will display **fewer behaviors that might indicate suboptimal data quality** (i.e., rounding).

Hypotheses

4. Asking respondents to check records will result in some significantly **different survey estimates** compared with those not asked to check records, suggesting a potential improvement in accuracy by prompting respondents to check records.
5. Due to interviewer presence, **CAPI respondents will be more likely than CATI respondents to check records** when prompted and more likely to provide more accurate responses to financial questions.

Experimental Design

Mode	Record Checking Prompt	No Prompt	Total
CAPI	950	949	1,899
CATI	693	692	1,385
Total	1,643	1,641	3,284

- Prompt group received lead letter asking them to prepare records in advance and suggestive prompts during the interview

Unit Response and Compliance

- Compared response rates (AAPOR RR1) and rate of record checking by experimental group/mode

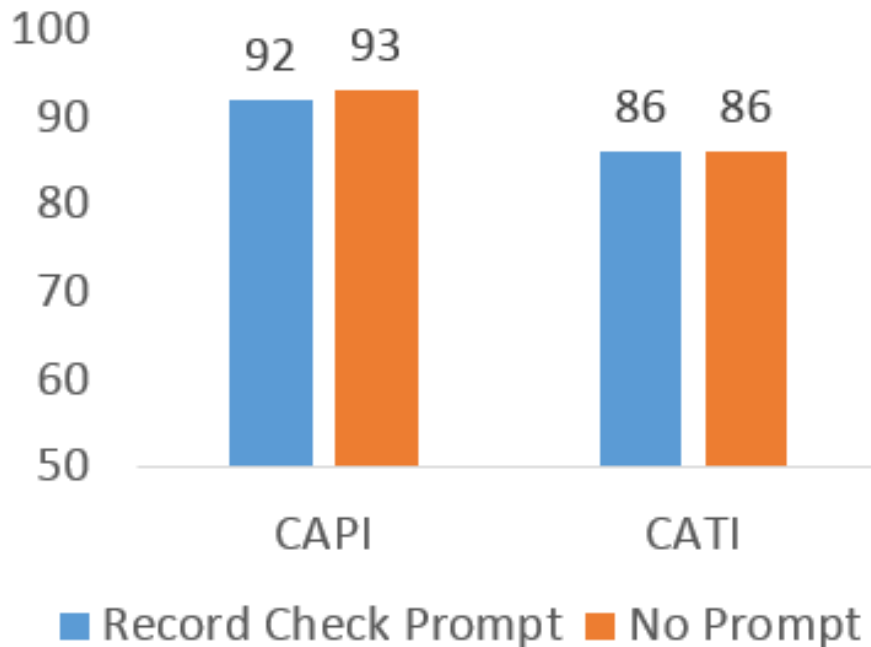
Survey mode	Encouraged to check records	<i>N</i>	Response rate (%)	Respondents who checked records
Overall	No	1,641	90	216 (13%)*
	Yes	1,643	89	334 (20%)*
CAPI	No	949	93	147 (16%)*
	Yes	950	92	185 (20%)*
CATI	No	692	86	67 (10%)*
	Yes	693	86	150 (22%)*

Note: CATI = computer-assisted telephone interviewing; CAPI = computer-assisted personal interviewing.

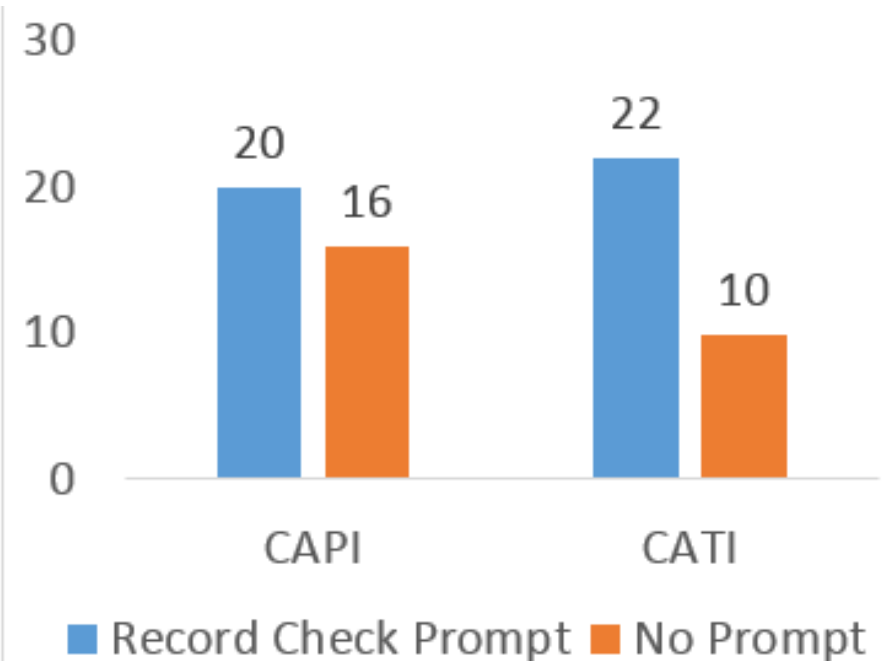
*Two proportion z test difference by treatment significant at $p < .05$

Unit Response and Compliance

Response Rate (%)



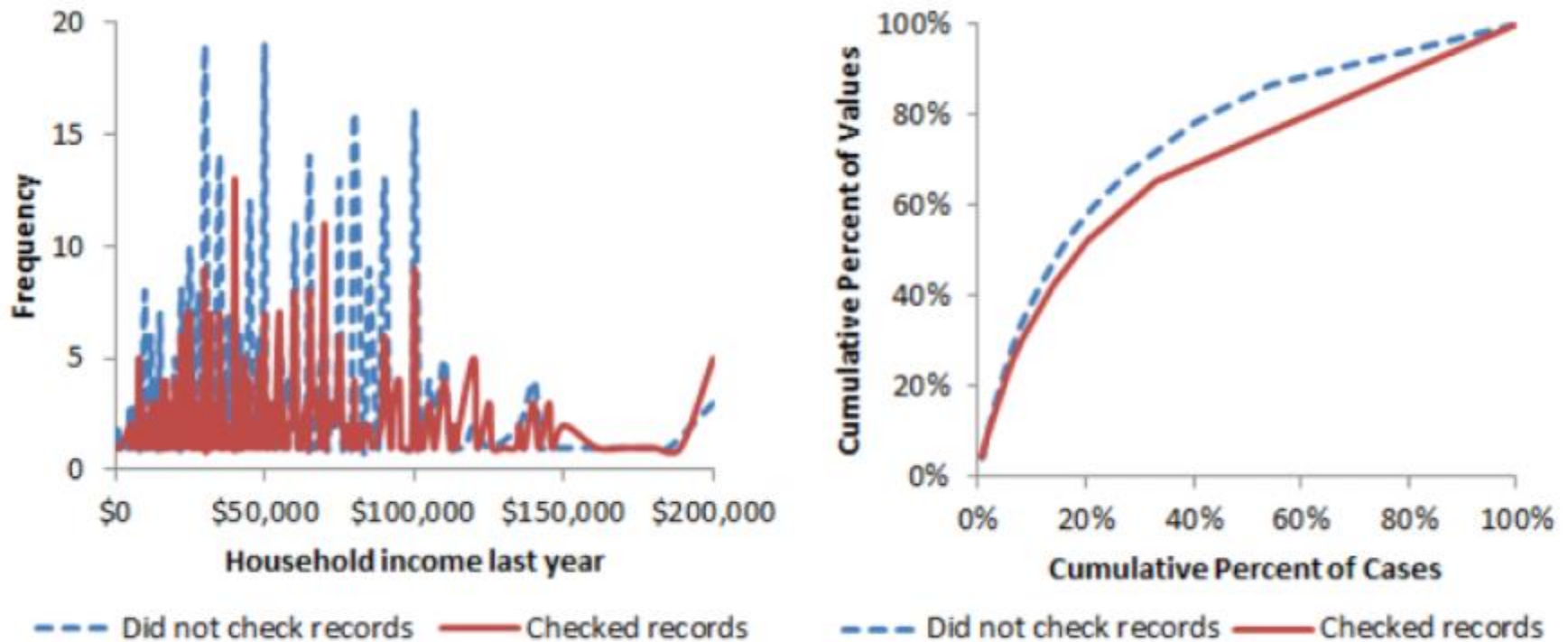
% Checking Records



Precision of Reported Values

- Is the act of checking records associated with less rounding?
- Wilcoxon-Mann-Whitney (WMW) test
 - orders reported values by descending frequency, plots the cumulative distribution
 - compares the area under each curve, and produces a Z score indicating whether the samples differ significantly (Hand 1997)
- Evidence that the act of checking records itself was associated with lower levels of rounding on several measures.

Precision of Reported Values



- More heaping of responses around \$50K, \$100K, etc. when records not checked
- But did not find similar results for comparison of control and experimental groups

Accuracy of Mean Reported Values

- Is checking records associated with higher accuracy, regardless of experimental condition?
- Assume differences in mean values between those checking and not checking indicates improved accuracy with checking
- Since checking records was not experimentally assigned, it would be inappropriate to draw conclusions from these results, but...

Accuracy of Mean Reported Values

Measure	Overall		CAPI		CATI	
	Encouraged to check records	Not encouraged to check records	Encouraged to check records	Not encouraged to check records	Encouraged to check records	Not encouraged to check records
Would expect checking records to improve precision						
Value of primary residence	123,409	128,372	117,319	120,985	129,549	136,042
Amount of positive equity in primary residence	32,675*	28,851*	33,667*	25,112*	31,653	32,875
Debt on credit card	4,885	4,386	4,708	4,176	5,099	4,659
Household income last year	51,283	53,728	44,936*	49,032*	60,779	60,784
Would not expect checking records to improve precision						
Purchase price of primary residence	147,470	153,551	128,904	139,427	167,680	172,183
Amount of monthly mortgage payment	853	881	825	861	882	901
Amount of monthly rental payment (contract rent)	591	583	563	551	691	724
Amount of rent paid last month	566	557	525	519	714	725
Amount of savings put aside in last year	5,036	5,091	4,289	5,064	6,069	5,124

Note: CATI = computer-assisted telephone interviewing; CAPI = computer-assisted personal interviewing.

*Means between those who were and were not encouraged significantly different at $p < .05$ (two sample t-test).

- Very little evidence of differences between those who were and were not prompted to check records.

Conclusions

Hypothesis 1

Those asked to prepare records for the interview **will not respond at the same rate as** those not asked to prepare records.

NO – Almost no difference in response rate by experimental treatment.

Hypothesis 2

Among those who respond to the survey, those encouraged to check records **will do so at a significantly higher rate** than those not encouraged.

YES – Overall, record checking was infrequent, but was more prevalent when the respondent was prompted, especially in CATI.

Hypothesis 3

Those asked to check records will display **fewer behaviors that might indicate suboptimal data quality** (i.e., rounding).

NO – Some evidence of less rounding when records actually checked but not enough between experimental groups to see a difference.

Hypothesis 4

Asking respondents to check records will result in some significantly **different survey estimates** compared with those not asked to check records, suggesting a potential improvement in accuracy by prompting respondents to check records.

NO – Little evidence of differences in survey estimates between those asked to check and not.

Hypothesis 5

Due to interviewer presence, **CAPI respondents will be more likely than CATI respondents to check records** when prompted and more likely to provide more accurate responses to financial questions.

NO – The presence of the interviewer did not seem to impact likelihood to check records, BUT this assumes CATI respondents were always truthful about reporting use of records.

Takeaways

- For CAPI and CATI surveys:
 - Asking respondents to prepare and reference financial records during the interview will not reduce participation
 - but it may only result in a modest increase in the rate of records checking
- General conclusion mirrors that of Couper et al. (2013) who examined this issue in a web survey setting

Takeaways

- Even when respondents check records, it is not clear that the data provided are more precise or accurate.
- Without a more directive intervention than the one we employed, suggestive prompts to check financial records will do no harm but may also do little good.

Future directions

- Consider designs where survey estimates can be independently confirmed
- Research into the specific types of financial items where records could improve retrieval for improved precision and accuracy
- Cognitive or usability laboratory testing
 - ease of the task and confidence in the reported amounts
 - record observations of respondents' success and difficulties in retrieving and reporting the right information

References

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