

Technical Note: House Effects Advantages for a Local University in Local Surveys: Response Rates and Intrusive Questions in Twenty Years of Telephone Surveys and Self-Administered Exit Polls

Bob Botsch

Distinguished Professor Emeritus, Political Science, USC Aiken
Director Emeritus, USC Aiken Social Science and Business Research Lab

Abstract: Lower response rates to personally intrusive questions are a problem in surveys potentially adding bias when certain kinds of people are systematically less likely to respond to these questions. We compare response rates to questions with increasing levels of intrusiveness (party identification, age, and family income). We explore the impact of demographic characteristics of respondents (such as age and gender) and the survey method (telephone surveys in which an interviewer asks the question and exit polls in which the respondent self-administers the questionnaire) on response rates to increasingly intrusive questions. Our data are surveys performed on Aiken County, South Carolina between 1994 and 2014 by students associated with the USC Aiken Social Science and Business Research Laboratory. Compared to national surveys performed by the National Election Poll (NEP) in 2004 and 2008, we had higher rates of responses on family income in telephone surveys, but slightly lower response rates for exit polls despite higher overall response rates for the surveys. Like national surveys, we saw some evidence of a decline over time in willingness to respond to the intrusive family income question. We found similar relationships to age with national surveys, but not to gender and party identification, neither of which affected our response rates. We conclude that our own “house effects” in how we perform surveys as well as the setting of our surveys and the reputation of the university within the local community may explain the differences we see with national survey performance, differences that may give us some advantages in stimulating responses to invitations to participate in the survey and in answering intrusive questions.

Background

Even if one has a representative sample, persuading respondents in a survey to answer each question is critical for the inferential leap from the sample to the general population of the survey. Therefore researchers must be concerned about factors that affect the willingness of respondents to answer different kinds of questions.

McDonald and Thornburg (2012) found that both the interview mode (self-administered and interviewer-asked) and the intrusiveness of questions made significant differences in non-response rates for different kinds of questions in National Election Polls (NEP) conducted in 2004 and 2008. A number of their findings are relevant to this report.

1) Consistent with previous literature, they found that “easy” demographic questions such as age and behavioral questions such as party identifications had higher response rates than the more intrusive demographic question on family income (328). This finding is consistent with earlier literature suggesting that cultural norms about privacy decrease the likelihood of answering relatively more intrusive questions such as family income (340).

2) They found that in both 2004 and 2008 respondents were about ten percentage points less likely to answer a question on family income when asked by an interviewer in a telephone survey than when filling out a questionnaire in an exit poll (329).

3) They found that age made a difference in the response rates for family income. The pattern was that middle aged people (ages 25-49) were most likely to give responses, followed by younger people (under 25), and those in the oldest group (over 49) were the least likely to respond (331-2).

4) Gender also made a difference in that men were more likely to respond to the family income question than women (332).

5) Those voting for Republican candidates were less likely to volunteer a response to the family income question than those voting for other candidates (336).

6) Placing the family income question on the back of the questionnaire in exit polls increased the response rate (336). We consistently placed this question as the last question in our front and back exit poll questionnaires and as the last question in our telephone surveys, so we effectively controlled out any placement effects over the many years covered in this report.

The decline in overall survey response rates is well documented (Zukin 2015). While a great deal of the decline is due to technological changes such as answering machines and most recently the replacement of land lines by cell phones, some of it is due to changing attitudes about privacy and surveys themselves as well as the higher frequency of attempted surveys by all manner of organizations, including political campaigns. These changes might lead to an increasing unwillingness not only to participate in surveys but also to answer more intrusive questions about personal matters such as age and family income.

“House effects,” that is, how different survey organizations structure and administer their surveys, how interviewers interact with respondents, and of course the wording and layout of the questions also can make differences in whether or not respondents answer particular questions. A university performing local surveys using mostly student interviewers has some possible advantages as well as disadvantages. Perhaps the largest disadvantage is that interviewers are a changing pool of people and rarely have a great deal of experience, despite several hours of training. On the other

hand, if the university has a positive reputation in the community and respondents feel that they are helping students in their educational experience, responses may be more forthcoming than from a distant and unknown national firm. Local residents see a familiar name, area code, and exchange on caller id in telephone surveys. They see name tags with the university as well as the local newspaper prominently displayed when the students approach them in exit polls ("The USC Aiken/*Aiken Standard* Exit Poll"). Our "house effects" remained relatively constant over the surveys in this report. Therefore, in addition to examining factors that have been found to relate to response rates on intrusive questions, we will also examine how our local university house effects might explain differences in our response rates with the response rates of national surveys on questions of varying intrusiveness.

Hypotheses

Based on this body of previous research, we will test the following hypotheses:

H1. Response rates will decrease as we move from party identification to age to family income, increasingly personal and intrusive questions.

H2. Because of increasing concern about data security and personal privacy, we expect that over time response rates to intrusive questions will fall with the rate of fall increasing as intrusiveness increases.

H3. Respondents will be less likely to answer a family income question when asked by an interviewer in telephone surveys than when they self-administer the questionnaire in exit polls.

H4. Older respondents will be less likely to answer a family income question than younger respondents regardless of how the questionnaire is administered.

H5. Males will be more likely to answer family income questions than females.

H6. Republicans and especially Tea Party Republicans will be less likely to answer the family income question than independents or Democrats.

Data and Controls

Our data are telephone surveys and exit polls of Aiken County performed by students in the USC Aiken Political Science Research Methods class almost every year between 1994 and 2014. In even numbered years we performed exit polls and in all odd years the class performed county-wide telephone surveys. There were two exceptions. In 2011 when we did an alternative online survey of students at USCA, largely because of increasing problems and complexities due to cell phone usage and cost. In 2013 the class did not run, so no survey was performed that year.

Several potentially confounding variables are controlled in these series of studies. First, the populations are relatively constant. The populations are always Aiken County residents, though in odd years it is all adults in homes with land lines and in even years it is adult residents who actually voted.

Second, all interviews are performed by USC Aiken students who were trained in the Research Methods classes. Obviously training differed for telephone surveys and exit polls, but across all of the surveys of each type the training was essentially the same. Of course different groups of students were performing the surveys each year with varying skill and motivational levels. But the overall mix of skill and motivational level should be about the same from year to year.

Third, in every questionnaire the family income item was last. This is because of fear that the intrusiveness of the question might cause respondents to terminate the survey if we asked the question earlier. In addition, we felt that the longer we waited to ask this question, the more invested the respondent would be in completing the survey and actually answer the question.

Fourth, the wording of the family income question was identical over all the telephone surveys and also for the exit polls. And between these two kinds of surveys the wording was almost identical with the only difference being how the respondent was asked to respond. Here are the two wordings.

Telephone interview wording: *Finally, I am going to read a list of family income groups. Just say "stop" when I reach the level that best describes your family's income last year.*

- 1) < \$15k 2) \$15-20k
- 3) \$20-25k 4) \$25-30k
- 5) \$30-35k 6) \$35-40k
- 7) \$40-50k 8) \$50-75k
- 9) \$75-100k 10) > \$100k

Exit poll wording: *Which of the following income groups best describe your family income this year? (Circle your answer)*

- 1) < \$15k 2) \$15-20k
- 3) \$20-25k 4) \$25-30k
- 5) \$30-35k 6) \$35-40k
- 7) \$40-50k 8) \$50-75k
- 9) \$75-100k 10) > \$100k

Because we will be comparing our response rates on questions with those in the NEP 2004 and 2008 studies, we should note similarities and differences between our wordings and theirs.

The wording on our family income questions are quite similar to the 2008 NEP family income wordings which asked respondents to place themselves in income groups. In 2004 both the NEP telephone and exit polls used an open ended format that asked the respondent to state their income for the previous year (McDonald and Thornburg 2012, 344).

Exit Poll:

[2004] 2003 total family income _____

[2008] 2007 total family income _____

- 1) *Under \$15,000*
- 2) *\$15,000-29,999*
- 3) *\$30,000-49,999*
- 4) *\$50,000-74,999*
- 5) *\$75,000-99,999*
- 6) *\$100,000-149,999*
- 7) *\$150,000-199,999*
- 8) *\$200,000 or more*

Phone Poll:

[2004] What was your total family income in 2003? [recorded exact income]

[2008] What was your total family income in 2007?

- 1) *Under \$15,000*
- 2) *\$15,000 to less than \$30,000*
- 3) *\$30,000 to less than \$50,000*
- 4) *\$50,000 to less than \$75,000*
- 5) *\$75,000 to less than \$100,000*
- 6) *\$100,000 to less than \$150,000*
- 7) *\$150,000 to less than \$200,000*
- 8) *\$200,000 or more*

Another possible difference is that we ALWAYS asked the income question last whereas in the NEP studies the question was always on the second page when it was a two page questionnaire, but it was not clear that it was always asked as the last question (McDonald and Thornburg 2012, 336). The second significant difference was that in our telephone interviews we avoided asking the respondent to state an income group. Rather, we instructed them to say “stop” when we read the correct group. This was designed to allow them to avoid saying actual dollar amounts, hopefully making them feel that they were revealing less to the interviewer. We saw this as analogous to the reporter asking the reluctant anonymous source to confirm the facts by remaining silent rather than verbally stating the facts.

Finally, the “house effects” of how respondents were chosen in exit polls closely mirrored the process performed in the NEP surveys. Every i^{th} voter leaving the polling place was approached and asked to fill out a questionnaire on a clipboard and then fold and place it in a box to help with anonymity (McDonald and Thornburg 2012, 327). Because NEP used several subcontractors to administer the telephone surveys they

had a variety of different house effects in both years and some differences between the two years (McDonald and Thornburg 2012, 331). Our house effects are relatively more constant across the years and within each mode of survey.

Findings

We will organize our findings by testing the hypotheses we presented and then compare our findings to findings in previous research.

H1. Response rates will decrease as we move from party identification to age to family income, increasingly more personal and intrusive questions.

Table 1 shows response rates for the party identification, age, and family income for each year in which a survey was performed. It also shows the differences in rates between the party id and age questions and then between the party identification and the family income questions.

Table 1. Response Rates Fall from Party ID to Age to Family Income

Year (n)	Resp Rte % Pty Id	Resp Rte % Age	RR Ptyld – RR Age	Resp Rte % Fam Inc	RR Ptyld – RR FamInc
1994 (663)	98	94	4	90	8*
1995 (256)	100	93	7	93	7
1996 (688)	98	91	7*	92	6*
1998 (625)	99	96	3	89	10*
1999 (200)	100	98	2	90	10*
2000 (568)	97	96	1	92	5
2001 (235)	99	97	2	90	9*
2002 (640)	99	96	3	92	7*
2003 (463)	98	97	1	91	7*
2004 (649)	98	94	4	90	8*
2005 (412)	100	99	1	90	10*
2006 (637)	99	95	4	91	8*
2007 (414)	99	96	3	88	11*
2008 (721)	100	94	6*	90	10**
2009 (400)	100	100	0	84	16**
2010 (758)	100	93	7*	89	11**
2012 (755)	99	95	4	92	7*
2014 (753)	99	91	8*	85	14**
All (9837)	98.9	94.8	4.1**	89.4	9.5**

Notes: * Difference in percentage points significant at $p < 0.05$

** Difference in percentage points significant at $p < 0.01$

Response rates for the party identification were nearly 100% in all the surveys. Of course anyone who volunteered to participate in a political survey should expect to

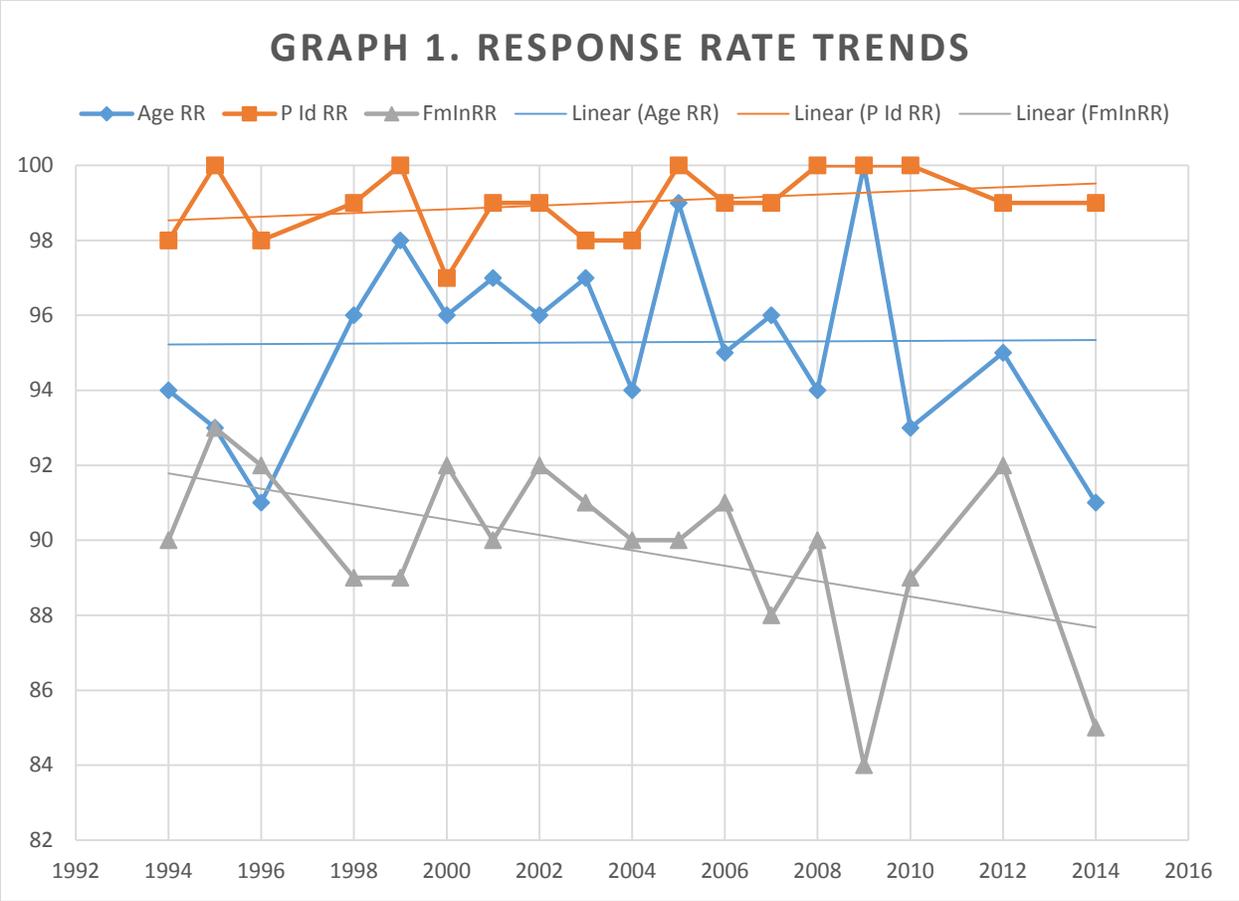
be asked questions about political parties. Rates dropped about four percentage points when we asked about age, a slightly more intrusive question. The response rates dropped another six points when we asked the family income question making them almost ten percentage points below the response rate for the party identification question. These shifts support our hypothesis that more intrusive and more personal questions tend to have lower response rates.

Our findings are consistent with other research also cited by McDonald and Thornburg (2012, 340) that the more personal the information, the less likely that respondents are to divulge the information (Moore, Stinson, and Welniak 2000; Pleis and Dahlhamer 2003; Dahlhamer, Meyer, and Pleis 2006).

H2. Because of increasing concern about data security and personal privacy, we expect that over time response rates to intrusive questions will fall with the rate of fall increasing as intrusiveness increases.

Graph 1 plots the response rates for each of the three questions: party identification, age, and family income. The graph includes simple regression lines as trend lines to give an indication of changes in response rates to each of the questions.

Not much change over time can be seen in the response rates for the party identification question. But we do see evidence of lowering response rates for the family income question, a decline in the range of four percentage points. The downward regression line for family income over the entire period was significant at 0.01. Though the regression line for the age question appears flat, we note some instability in the trends on that question. If we ignore the surveys prior to 1999 and drop out the 2009 outlier, the trend for age is also down about four percentage points and that trend was significant at $p = 0.01$. So our data seem to lend support H2 for the most intrusive question and perhaps for the age question as well. The greatest and most consistent rate of fall was for the most intrusive question, family income.



H3. Respondents will be less likely to answer a family income question when asked by an interviewer in telephone surveys than when they self-administer the questionnaire in exit polls.

This hypothesis tests whether respondents are less likely to answer the most intrusive question when they are directly dealing with a human interviewer over the telephone, bringing in to play the impacts of social desirability, than when they are self-administering the questionnaire in the exit poll situation, which adds an element of privacy.

Table 2. No Difference in Family Income Response Rates between Telephone Surveys and Exit Polls

Survey Type:	Telephone Surveys (n)	Exit Polls (n)
Resp Rate on Fam Inc	89.0% (7)	89.6% (11)

The average response rate in the seven telephone surveys on which respondents were asked by an interviewer about their family income was slightly lower

than the response rate in the eleven exit polls in which the respondent self-administered the questionnaire. While the 0.6 percentage point difference is in the expected direction, it is not close to being statistically significant. Therefore, our experience does not support this hypothesis.

Compared to the response rates in the 2004 and 2008 National Election Polls conducted over the telephone, our response rates were significantly higher, by about seven percentage points. On the other hand, for the exit polls differences were in the opposite direction with the USCA surveys averaging 6.6 points lower than the 2004 NEP and 1.6 points lower than the 2008 NEP, relatively small differences that were significant because of the high n's involved.

Table 3. Family Income Response Rates: USCA Compared to NEP

Survey Type	USCA	2004 NEP ¹	2008 NEP ¹
Telephone	89.0%	82.4%**	81.9%**
Exit Poll	89.6%	94.2%**	91.2%*

Notes: ¹ Percentages derived from Table 1 in McDonald and Thornburg (2012, 329)

* Difference in percentage points between USCA and NEP significant at $p < 0.05$

** Difference in percentage points between USCA and NEP significant at $p < 0.01$

Our findings that mode of interview had no significant impact on response rates in the intrusive question of family income differs from previous research cited by McDonald and Thornburg (Bishop and Fisher 1995; Presser and Stinson 1998; Kraus and Augustin 2001; Tourangeau and Smith 1996; Traugott and Price 1992). Why?

The most likely explanations fall under what are generally considered “house effects.” That our telephone interviews had higher response rates on the family income question relative to the NEP rates might be attributed to some advantages we had. Though our student interviewers were almost certainly not as experienced as paid interviewers for national surveys, they were highly motivated because they had to complete a set number of interviews for part of their course grade. We instructed student callers to shamelessly employ a “plea for pity” by asking prospective respondents to “help them get their class assignment done.” It was quite effective in producing an overall response rate of 59% of those answering the telephone to take the survey, a lot higher than the 29% overall response rate reported for the 2008 NEP telephone survey (McDonald and Thornburg 2012, 328), In addition, respondents who had caller id saw that the local university was calling, which may have allayed fears that some unknown outside group was prying into their personal lives.

Why our response rates on the family income question were slightly lower than the NEP response rates on that question is a bit more difficult to explain. The “house effects” that produced relatively high overall survey response rates on telephone surveys, however, did carry over to the exit polls. Our exit poll overall response rate average of 70% was much higher than the reported rates reported for the NEP exit polls, 53% in 2004 and 46% in 2008 (McDonald and Thornburg 2012, 328). But these

higher overall response rates did not carry over to answering the last question on the survey, the family income question.

We might speculate that self-administration actually hurt us here. Students would not know that the respondent did not answer the family income question because the respondent could skip this question, fold up the questionnaire and put it in the “ballot box” without the student seeing it. On the other hand, in a telephone interview the student asking the question would obviously know that the respondent was not “helping them get their assignment done” if they refused to answer the family income question. So it may have been easier to not answer an intrusive question when the student they were presumably helping would not know.

The social desirability bias that other researchers used to explain lower response rates on intrusive questions asked by interviewers (Moore, Stinson, and Welniak 2000; Pleis and Dahlhamer 2003; Dahlhamer, Meyer, and Pleis 2006) may have been trumped by the social desirability of being helpful to a student who was struggling to complete an assignment. But when the respondent was able to skip the question without appearing to be unhelpful because the questionnaire was self-administered, they were relatively more likely to choose to protect private information.

H4. Older respondents will be less likely to answer a family income question than younger respondents regardless of how the questionnaire is administered.

We divided the respondents into three age groups to test this hypothesis, those under 25 years of age, those from 25 to 49, and those 50 and older. We added up those responding to the family income question over all our surveys and divided that by the total number of respondents in that age group.

Table 3. Older Respondents Less Likely to Answer Family Income Question

Age Group	18-24 (n)	25-49 (n)	50 and up (n)
Resp Rate on Fam Inc	94.5% (435)	95.6% (2615)	91.5% (3406)

While younger people were slightly lower in their response rate on the family income question than middle aged people, the difference of 1.1 percentage points was not statistically significant. However, older respondents were significantly less likely to respond to the family income question than either of the younger groups ($p < .05$).

The trends we found are similar to those found by McDonald and Thornburg (331-2). Middle aged people were most likely to respond to the age question, and the oldest group were the least likely to respond.

H5. Males will be more likely to answer family income questions than females.

We thought that females might be less likely to reveal family income than males, especially in the South where our surveys took place. Patriarchic southern social norms define traditional gender roles that usually assign money matters to men. McDonald and Thornburg found a gender difference in their examination of two national polls (332). So we looked at how all males and all females in our surveys responded to the family income question.

Table 4. Males and Females Equally Likely to Answer the Family Income Question

Gender	Males (n)	Females (n)
Resp Rate on Fam Inc	89.6% (2992)	89.4% (3770)

We found no significant difference in the response rates of males and females over the surveys covered in this report. Perhaps gender roles are eroding or perhaps our student interviewers, who were about two-thirds female (reflecting the gender breakdown of our student body), were less intimidating than older interviewers in national studies. In addition, “helping students get their assignment done” may have trumped the influence of gender roles enough to wipe out most of the difference. Speculating a bit further, regional gender roles quite possible amplify the expectation that females play a helping role, in this case helping students.

H6. Republicans and especially Tea Party Republicans will be less likely to answer the family income question than independents or Democrats.

McDonald and Thornburg found a difference in response rates between those who voted for Republicans and those who voted for candidates of other parties (336). Because our surveys in non-election years did not ask a voting choice question, we could not look at voting choice and include all the surveys. Rather, we employed party identification rather than voting choice as the independent variable to explain response rates to the family income question.

Table 5. Partisanship Not Related to Answering the Family Income Question

Party Identification	Dem (n)	Indep (n)	Rep (n)
Resp Rate on Fam Inc	90.9% (2137)	88.5% (1109)	89.8% (3403)

We found no relationship between partisan identification and the response rates to the family income question (see Table 5). In fact, in some years (including the election years of 2004, 2006, and 2010), those who self-identified as Republicans had slightly higher response rates than Democrats. Again, we might speculate that our “house effects” pertaining to locality and helping students trumped any impact of partisanship.

Discussion

Response rates on questions of varying intrusiveness over twenty years of exit polls and telephone surveys in Aiken County South Carolina bore both similarities and differences to relationships in the 2004 and 2008 National Election Polls and to trends in national polling.

Looking first at similarities:

- The relative intrusiveness of the question made a difference in the response rates, with nearly all responding to the party identification question, fewer responding to the age question, and the least responding to the family income question.
- Age made a difference with middle aged respondents having the highest response rate on the family income question and the oldest respondents the lowest rate.
- Like national polling, we found declining response rates to the family income question, and at least some hint of a lower rate for the age question, the two questions that were more personal than asking party identification.

We also found some differences:

- Perhaps most notably, we found no difference in the response rates to the intrusive family income question between the telephone surveys and the self-administered exit polls. While we cannot definitively explain this lack of difference, we would speculate that our “house effects” pertaining to how our student interviewers appeal to respondents is a likely suspect.
- Relative to national surveys, we had higher response rates on the family income question in telephone surveys and slightly lower rates in self-administered exit polls. Again, our particular “house effects” is the likely suspect for these differences.
- We found no difference between males and females in their response rates to the family income question. Our “house effects” may have played a role here.
- Nor did we find any difference in response rates by party identification. Again, our “house effects” are a prime suspect for this lack of difference.
- Finally, our overall response rates for both kinds of surveys were notably higher than the national polls.

As is certainly well known, “house effects,” which includes who does the interviewing and the conditions under which the interviews take place can make a great difference in

response rates for a survey as a whole and on particular questions in a survey. Our findings suggest that local surveys performed by a local university are part of these “house effects.” Surveys performed at a local university by students, many of whom are members of that community, can confound some of the expected relationships and trends found nationally in surveys administered by those outside the local community. In particular, the social value of helping local students seems to ameliorate some of the reticence in answering personally intrusive questions such as family income.

Moreover, our overall response rates for surveys performed over more than twenty years were higher than rates for national surveys. Having a local number as part of the caller id in the telephone surveys probably played a significant role in getting prospective respondents to answer the call. This is consistent with findings that respondents are more likely to answer and respond to local area code caller id than an 800 number in both state and national surveys (Dutwin 2011). Having a local number on the caller id may well have helped even more, though we cannot draw a definitive conclusion because we did not have a control group.

We would conclude that well trained college student interviewers with the advantage of operating in a local setting perform about as well as and in some cases better than highly paid experienced interviewers working for national organizations in both response rates and stimulating respondents to answer intrusive questions.

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