

Internet Use among Low-Income Longitudinal Survey Respondents as they Update Contact Information

Bryan B. Rhodes and Ellen L. Marks

RTI International
6110 Executive Blvd., Suite 902
Rockville, MD 20852
brhodes@rti.org / emarks@rti.org

Achieving maximum participation from study participants is a primary goal of virtually all surveys. Researchers review the literature, extract lessons from experience, and invest substantial resources to design survey methods that remove as many barriers as possible so sample members can and will respond to efforts to obtain their participation. Over the past decades as survey research has become more sophisticated and as new technologies surface, survey designs have kept pace. Computer-assisted telephone and personal interviewing, use of handheld devices, and access to geospatial databases are examples of some recent developments in survey research.

The growth of the Internet and emerging use of Web-based data collection are particularly interesting to survey researchers. This mode of data collection offers several benefits, among them the potential for lower costs, wider participation, fewer errors, and faster turnaround. As with any new approach, the opportunity for Web-based information collection has produced many questions about its use, including the representativeness of the sample, especially in regard to populations that may not have ready access to the Internet.

To date, many studies conducted on Internet usage in survey research focus on technical and statistical concerns associated with Web-based data collection.¹ In this paper, we take advantage of an ongoing study that asks lower-income sample members to confirm or update contact information in various ways. They may respond by mail, phone, or Web. Although the study was not designed for this purpose, we are able to compare characteristics of Web vs. non-Web responders, thus helping advance understanding about potential benefits and disadvantages of using the Web in survey research.

Background of the Study

Saving for Education, Entrepreneurship, and Downpayment (SEED) is a multiyear national effort to help children and youth open savings accounts that can eventually be used for expenses associated with education, opening a business, or making a down payment on a house purchase. The basic principle underlying SEED is that asset development is a way to help families achieve economic stability and improve chances for young people to succeed. SEED is targeted primarily at low-income families. At present, SEED is operating 12 programs with community partners across the United States.²

This paper reports on data from one SEED experiment known as the Pre-School Demonstration and Impact Assessment, being conducted in conjunction with the Oakland Livingston Human Service Agency (OLHSA), a community-based organization in Pontiac, Michigan, that provides services to low-income families.

The overarching research question focuses on the effect of having a savings account that can eventually be used for a child's education. In the experiment,³ 14 Head Start centers were identified and matched on the basis of various enrollment and

¹ See, for example, D.A. Dillman, *Mail and Internet Surveys: The Tailored Design Method*, John Wiley & Sons, New York, 2000; H.C. Contrino, S. Echevarria-Cruz, and J. Shleymovich, "Potential Utility of Web Based Data Collection Options," presented at the 2005 FCSM Conference, November 14, 2005, Arlington, VA; D. Andrews, B. Nonnecke, and J. Preece, "Electronic Survey Methodology," *International Journal of Human-Computer Interaction*, Vol. 16, No. 2, 2003, pp. 185-210; and J.A. Benfield and W.J. Szlemko, "Internet-based Data Collection: Promises and Realities," *Journal of Research Practice*, Vol. 2, No. 2, Article D1, retrieved September 4, 2007, from <http://jrp.icaap.org/index.php/jrp/article/view/30/51>.

² Funding for SEED comes primarily from The Ford Foundation and other philanthropic organizations. CFED (formerly the Corporation for Enterprise Development) runs SEED operations and provides technical assistance. Other partners include the Center for Social Development at Washington University, the University of Kansas, and the New America Foundation.

³ Researchers at the University of Kansas and the Center for Social Development designed the SEED Impact Assessment in cooperation with colleagues at the University of Michigan, CFED, and OLHSA. SEED researchers are guided in their work by a Research Advisory Council, a group of social scientists with expertise in child welfare, youth development, asset policy, and economics.

demographic characteristics,⁴ then the centers were randomly assigned to treatment and comparison groups. Parents at the 14 centers were invited to participate and complete a baseline survey. After completing the baseline survey, respondents whose child was at a Head Start treatment site were informed they had been selected to receive \$800 deposited in an account in the state's 529 plan (a college savings plan) and the opportunity to earn up to \$1,400, which would be used to match funds the respondent (or others) deposited in the 529 account. The child is named as the beneficiary.

The Sample

To recruit sample members, OLHSA mailed letters to all families enrolled in the 14 Head Start centers. Letters were sent in summer 2004 and explained the study, outlined incentives (\$30 for a completed baseline interview in fall 2004, \$10 for each time contact information was updated, and \$60 for a completed follow-up interview in fall 2008), and asked sample members to indicate their willingness to participate by signing and returning a consent form. After two mailings, responses were sparse. As Head Start centers opened for the school year in September 2004, OLHSA staff attended open houses and parent orientation sessions during which they explained the study and encouraged participation, but enrollment into the study remained low. To increase enrollment, RTI (which had been awarded the grant to conduct data collection) posted staff at Head Start centers during dropoff and pickup times, where they approached adults, explained the study, and invited them to participate.⁵

Although enrollment in the sample improved, the numbers remained below targets set by the research team and funders, so the enrollment period was extended (and, in fact, continued throughout the data collection period) and additional steps were taken, including:

- allowing verbal consent (previously, written consent was necessary to be enrolled in the sample);
- increasing the incentive to \$40;
- attempting to contact remaining eligible parents by telephone to encourage their participation; and
- preparing attractive information packets and sending them home with Head Start children.

At the conclusion of these efforts, 871 parents were enrolled in the study.⁶

Survey Administration

The baseline survey was administered via a computer-assisted telephone interviewing (CATI) system from RTI's call center in Greenville, North Carolina. The survey was conducted between September 21 and December 1, 2004.⁷ A total of 732 interviews were completed. Most participants were reached through telephone calls to their homes, although a substantial portion—143 respondents—called the project's toll-free number in response to messages left on an answering machine or with someone at their home. Surveys conducted in English and Spanish lasted 45 minutes on average. Because a number of respondents wanted to conduct the survey in Arabic, RTI trained a translator and a three-way call was conducted with the

⁴ Head Start is a federally funded early childhood program that offers education, nutrition, and health services to children between the ages of 3 and 5. Eligibility is determined by household income relative to family size. In 2004, the income ceiling was \$18,850 for a family of four (Head Start Family Income Guidelines for 2004, ACYF-IM-HS-04-03; <http://eclkc.ohs.acf.hhs.gov/hslc>, accessed September 3, 2007).

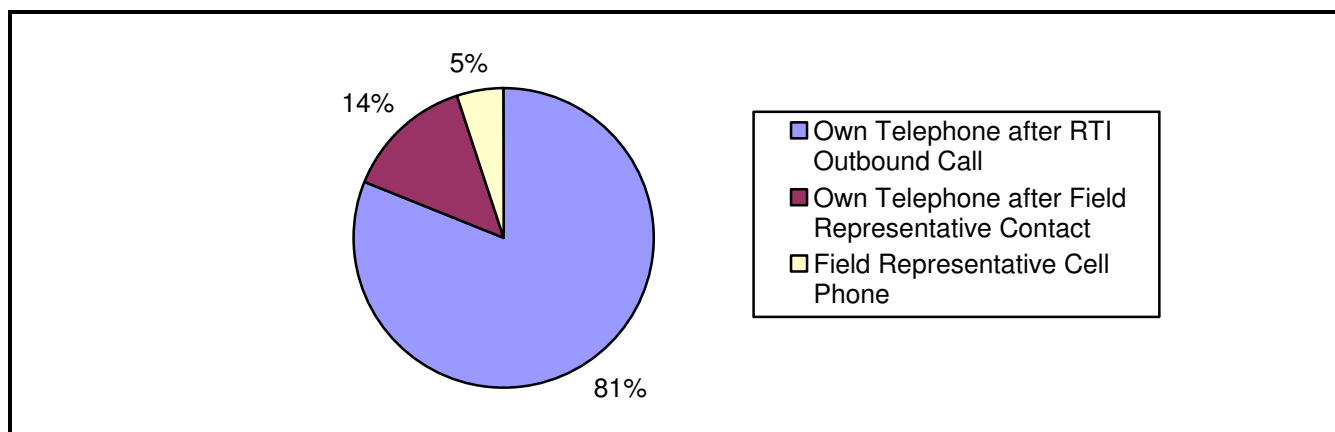
⁵ Several Head Start centers transport children by bus. Because there would have been no opportunity to present the study to parents, we did not post staff at those locations.

⁶ Program designers had initially hoped to have 1,200 respondents complete the baseline survey.

⁷ Initially, survey operations were to be completed on or about October 20. Because the process of obtaining signed consent did not produce the expected number of study participants, new plans had to be implemented to increase sample size and the period of survey operations was extended.

respondent, the interviewer, and the translator. After RTI had made at least 10 attempts to reach a respondent by telephone, cases were assigned to trained field representatives who visited the sample members' homes to encourage participation. Field representatives offered to phone RTI's call center using a cellular telephone in case lack of access to a phone had hindered participation in the study. Of the study's 732 respondents, 588 either answered RTI's call or called RTI after receiving a message, 105 called RTI after having been contacted by a field representative at their homes, and 39 used a field representative's cellular telephone to call RTI and complete the interview (see Exhibit 1). The response rate was 89.97 percent.

Exhibit 1. Phone Use in Baseline Survey



After reviewing the numbers, SEED program planners were still disappointed with the number of parents who agreed to participate in the initiative. In response, the invitation to enroll in SEED was extended, the evaluation was correspondingly expanded, and RTI was asked to locate and interview parents who agreed to open SEED accounts but had not completed the baseline survey (most entered Head Start after the period for conducting the baseline survey had ended). We completed surveys with an additional 58 respondents, thus bringing the total sample size to 790.

Sample Maintenance

In anticipation of achieving a high response rate for the follow-up survey planned for fall 2008 (with a target of 85 percent retention), RTI conducts semi-annual sample maintenance, namely verifying sample members' current addresses and telephone numbers. Information is also gathered to determine whether the focal child from the baseline study is still living with the original sample member. If the focal child has moved, RTI attempts to obtain contact information for an adult member in the household where the focal child is living.

The first two rounds of sample maintenance activities were conducted 6 and 12 months after the baseline survey. We implemented the following techniques, which we call "full-scale locating:"

- A letter was mailed to the survey respondent, asking him/her to confirm or update contact information by return mail, a phone call to RTI's toll-free project telephone number, or entering information on the project's secure Web site.
- After 2 weeks, nonrespondents were mailed a follow-up letter making the same request.
- After 2 more weeks, RTI made telephone calls to remaining nonrespondents.
- After 4 weeks, RTI sent field representatives to remaining nonrespondents' homes.

A \$10 incentive was mailed to every individual who confirmed or updated contact information.

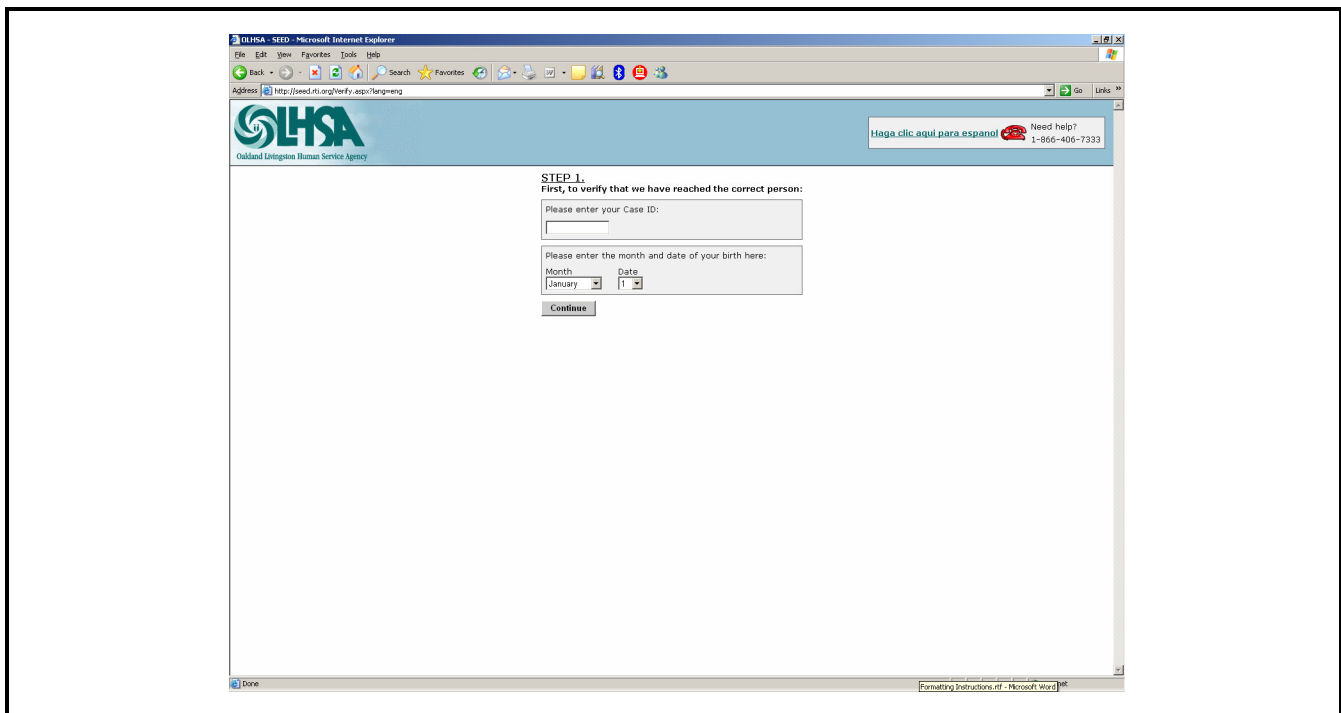
Results from the first two rounds of sample maintenance were extremely positive: RTI heard from 97 percent and 95 percent of respondents, respectively, who confirmed or updated their contact information. Still, we sensed that sample members were becoming a bit numb to our outreach, so we instituted a new procedure for subsequent rounds of sample maintenance. The procedure began with dividing the sample into half according to the birth date of the baseline survey respondent.

- Respondents born between January and June receive a birthday card in the month of their birth with a request to confirm or update their contact information by telephone, mail, or Web. Sample members who respond receive \$10.
- During that same period, sample members with birthdays between July and December receive full-scale locating, described above. To encourage sample members to respond early, people who respond within 10 days of the initial letter receive \$20; people who respond later receive \$10.
- The process is switched for the two samples during the second half of the year.

Thus, each sample member receives one birthday card and one attempt at full-scale locating during the course of each 12-month period.

Note that in each round of sample maintenance, respondents can update contact information in one of three ways: completing a form and returning it through the mail, calling the study's toll-free number, or visiting a study Web site.⁸ Sample members who choose to update their contact information via the study Web site are asked to enter their unique case identification number (printed on all correspondence with the respondent) and the month and date of their birth date (see Exhibit 2). The Web site checks this information against a master database, provides the respondent with contact information on record, then asks the respondent to confirm or update that information. Visitors to the Web site can choose between English or Spanish.

Exhibit 2. The SEED Sample Maintenance Web Site



⁸ During full-scale tracing, respondents contacted in person were able to give updated information to the field representative.

Sample Maintenance Results

Sample maintenance efforts to date have been extremely successful. At 2-1/2 years after baseline, overall retention is above 90 percent. Two other figures reinforce the point: (1) only 1.2 percent of baseline survey respondents have never confirmed or updated their contact information; and (2) when using full-scale locating, we have heard from at least 94 percent of respondents in each round of sample maintenance.

Five rounds of sample maintenance have been completed since the baseline survey, the most recent during the first half of 2007 (30 months after the baseline survey). Exhibit 3 presents the methods respondents have used at each round to confirm or update their contact information. In all instances of full-scale locating, the most common method is reply by phone (which includes incoming calls from respondents and outgoing calls RTI places to the respondent). When only a birthday card was sent, however, more respondents reply via mail.

Exhibit 3. Method of Response, Each Round of Sample Maintenance (in percents)

Method of Reply	Round 1 Spring 2005	Round 2 Fall 2005	Round 3 Spring 2006		Round 4 Fall 2006		Round 5 Spring 2007	
	Full Locating (n=732)	Full Locating (n=732)	Full (n=364)	B-day (n=367)	Full (n=367)	B-day (n=364)	Full (n=364)	B-day (n=367)
Web	3	5	9	5	5	4	9	7
Mail	37	29	38	25	35	24	35	24
Phone	47	54	41	9	44	10	36	6
In-person	9	8	6	n/a	9	n/a	16	n/a
Refusal	1	0	0	0	1	0	0	0
No response	2	5	6	62	6	62	3	63

Web vs. Non-Web Responders

The ability to locate and re-interview baseline survey participants at the time of a follow-up survey is critical in longitudinal studies, so researchers often use a variety of methods to keep accurate contact information on sample members between survey administrations. Researchers, however, must balance the costs of each method with the expected outcome. Although some methods may be effective in allowing some sample members to easily update their information, the number who use a given method must be sufficiently large to be cost effective. Since lower-income populations are less likely to have Internet access in the home,⁹ the use of the Web may be less than optimal for studies of these populations. RTI's SEED study, however, found the Web to be a useful option for lower-income families. Over the five rounds of sample maintenance conducted so far, 18 percent of respondents have used the Web option at some point to update their contact information.

⁹ About one-fourth of all households with incomes of less than \$15,000 report having Internet access in the home in October 2003. See The 2007 Statistical Abstract, Households With Computers and Internet Access by Selected Characteristic: 2003 (http://www.census.gov/compendia/statab/information_communications/internet_access_and_usage, accessed September 6, 2007).

When they are given multiple methods for response, we assume that sample members will generally choose to reply using whatever method is easiest for them at that time. If a particular option is not available, some sample members may not reply and thus be lost to follow-up. If those members are lost and/or are sufficiently different from those who are retained in the sample, follow-up information could be affected by nonresponse bias. To help understand characteristics of low-income respondents who use the Web for sample maintenance, we examine characteristics of the SEED sample below.

Demographics

We analyzed six major demographic categories (defined from self-reports on the baseline survey)—race, ethnicity, education, age, employment status, and household income—to look for differences between Web and other types of responders. Comparing Web responders (defined as those who ever used the Web to update their contact information) and non-Web responders, Exhibit 4 shows that Web responders are more likely than nonresponders to be white, have at least some college education, range in age from 25–34, and have an annual household income over \$15,000.

Exhibit 4. Demographic Characteristics of Web vs. Non-Web Sample Maintenance Responders (in percents)

Characteristic		Web Responders	Non-Web Responders
Race*	White	55	44
	African-American	33	46
	Other	12	10
Ethnicity	Hispanic	10	12
	Non-Hispanic	90	88
Education level*	Less than high school	19	32
	High school diploma/GED	28	33
	Some college or more	53	36
Age at baseline*	18–24	19	27
	25–34	61	47
	34 and above	19	26
Employment	Respondent works < 30 hours/week	67	66
	Respondent works ≥ 30 hours/week	33	34
Income level*	< \$15,000	46	56
	\$15,000 and above	54	44

* $p < .05$

Notes: Household median income for the sample is \$15,000 annually; median income in 2004 for Oakland County, Michigan is \$64, 293.¹⁰

Trends

Except for the fourth round of sample maintenance, the trend is a steady increase in the number of respondents who use the Web to confirm or update their contact information (see Exhibit 5). The upward trend in absolute numbers is even more

¹⁰ U.S. Bureau of the Census. “State and County Quickfacts.” U.S. Census. <http://quickfacts.census.gov/qfd/states/26/26125.html> (accessed August 2, 2007).

meaningful because half of the sample was contacted only through a birthday card during rounds 3, 4, and 5. (Typically, the birthday-card-only results in responses from only about one-third of the sample.)

We expected that most who used the Web to respond would do so each time. Instead, we found that 69 percent of respondents who ever used the Web for sample maintenance did so only one time and only 10 percent used the Web more than two times (see Exhibit 6). Additionally, the percentage of Web respondents who were first-time Web respondents remained above 50 percent for every round of sample maintenance.

Exhibit 5. Total Number of Web Responders, by Round of Sample Maintenance

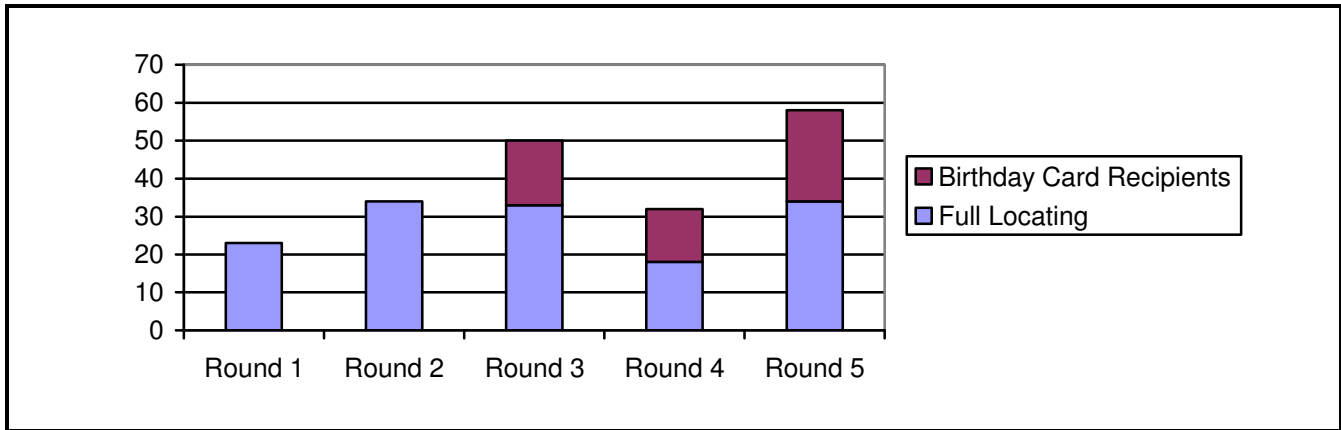


Exhibit 6. Repeat Web Repliers

Number of Times Replied by Web	Percent of All Web Respondents
1	69
2	22
3	4
4	6
5	0

We examined the demographic characteristics of Web responders and non-Web responders at each round of sample maintenance (see Exhibit 7). The analysis shows no particularly interesting differences except one, and it is important. Web responders who received full locating efforts in rounds 3 and 4 were significantly more likely to be in the higher-income bracket (i.e., household income over \$15,000 at baseline). This changed dramatically in round 5. Although the same respondents (those with birthdays in the second half of the year) received full locating efforts in both rounds 3 and 5, the percent of Web responders in the lower-income bracket increased from 36 percent to 62 percent (see Exhibit 8). This change is shown in Exhibit 9. For the first four rounds of sample maintenance, most Web responders had baseline incomes of over \$15,000. In the fifth and most recent round, where Web response was the highest, Web respondents with baseline incomes less than \$15,000 outnumbered those with incomes greater than \$15,000.

The number in the lower income bracket who use the Web to reply tends to increase over time, paralleling the upward trend in the overall sample. They show a decrease in round 4, which mirrored the decrease in the total sample, and then a large

increase during the fifth round—so large that during the fifth round those with incomes less than \$15,000 constitute 55 percent of all Web respondents (see Exhibit 10).¹¹

Exhibit 7. Demographic Characteristics of Web Responders and Non-Web Responders at Each Round of Sample Maintenance

Characteristic	Round 1		Round 2		Round 3				Round 4				Round 5			
	Full Locating (n=732)		Full Locating (n=732)		Full (n=364)		B-day (n=367)		Full (n=367)		B-day (n=364)		Full (n=364)		B-day (n=367)	
	Web	Not	Web	Not	Web	Not	Web	Not	Web	Not	Web	Not	Web	Not	Web	Not
Race																
White	48	46	55	46	30	42	50	51	72	50	64	40	48	40	54	51
Afr.-Amer.	33	44	36	44	55	45	31	39	28	39	21	51	33	51	29	39
Other	19	10	13	10	15	9	19	10	0	11	14	9	18	9	17	10
Ethnicity																
Hispanic	6	12	12	12	6	12	12	12	0	13	0	12	6	12	0	13
Non-Hisp.	94	88	88	88	94	88	88	88	100	87	87	88	94	88	100	87
Education																
Less than HS	17	30	21	30	9	31	24	30	6	31	21	29	15	30	21	30
HS Diploma/GED	26	32	24	32	27	32	29	33	44	32	29	31	26	32	38	32
Some college or more	57	38	56	38	64	37	47	38	50	38	50	39	53	38	42	38
Age																
18–24	13	46	18	26	12	26	24	27	22	27	14	26	15	26	17	27
25–34	74	29	62	49	55	51	59	48	67	47	71	50	65	50	50	48
35 +	13	25	21	25	33	23	18	26	11	26	14	24	21	24	33	25
Employment																
< 30 hrs/wk	74	66	66	66	69	66	65	66	72	65	54	67	76	66	63	66
≥30 hrs/week	26	34	34	34	31	34	35	34	28	35	46	33	24	34	38	34

Exhibit 8. Income of Web Responders and Non-Web Responders at Each Round of Sample Maintenance

Income %	Round 1		Round 2		Round 3				Round 4				Round 5			
	Full Tracing (n=732)		Full Tracing (n=732)		Full (n=364)*		B-day (n=367)		Full (n=367)*		B-day (n=364)		Full (n=364)		B-day (n=367)	
	Web	Not	Web	Not	Web	Not	Web	Not	Web	Not	Web	Not	Web	Not	Web	Not
<\$15,000	39	55	50	55	36	59	41	52	28	53	43	58	62	57	46	52
\$15,000+	61	45	50	45	64	41	59	48	72	47	57	42	38	43	54	48

* = $p < .05$

¹¹ Interestingly, 55 percent of the baseline sample have incomes of less than \$15,000.

Exhibit 9. Percent of Web Responders by Income at Each Round of Sample Maintenance

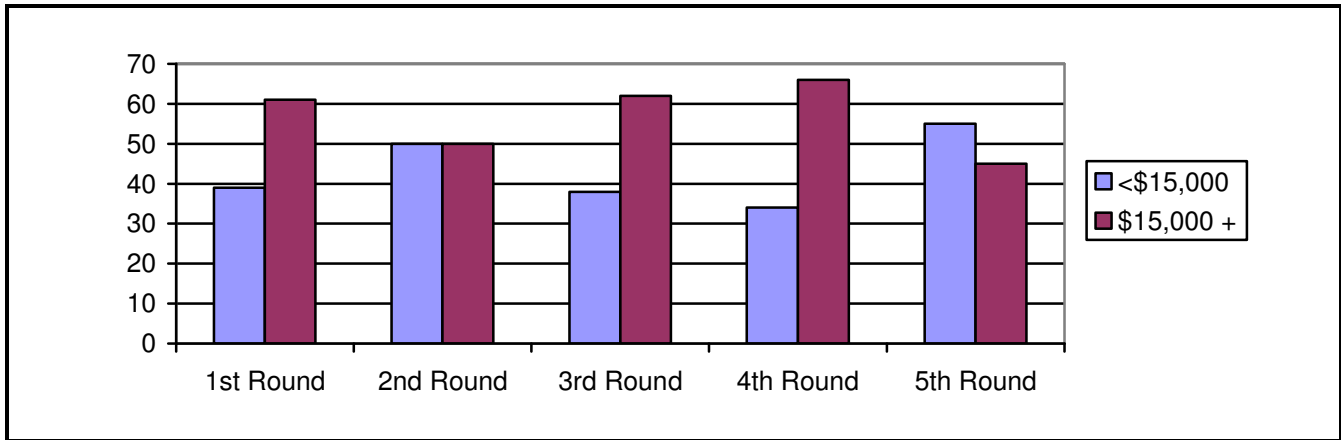
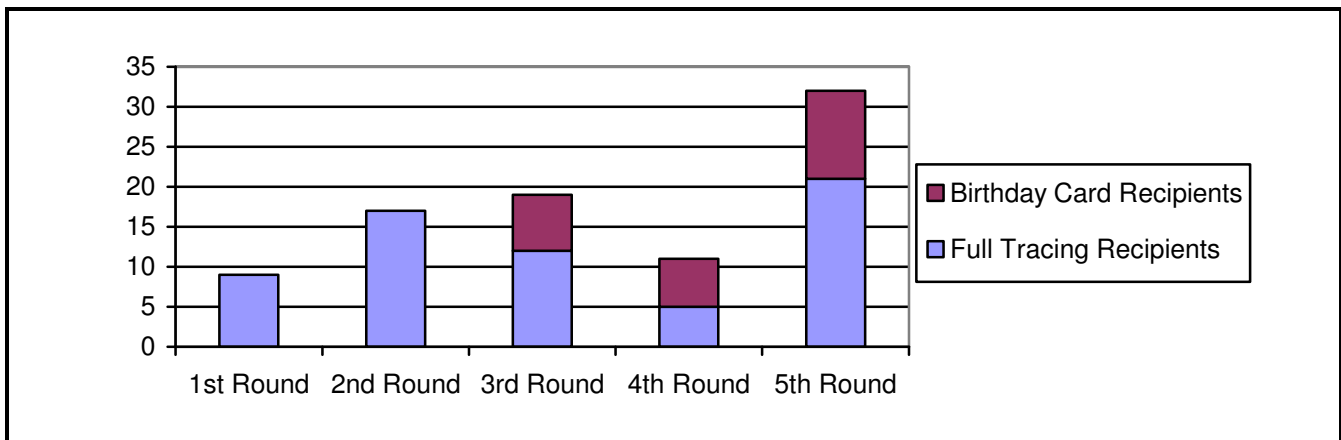


Exhibit 10. Number of Web Responders with Income Less Than \$15,000 per Year (at baseline)

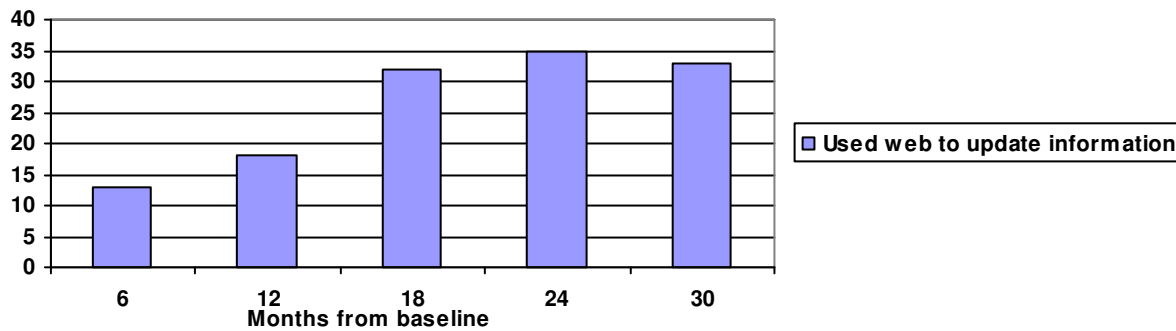


Internet Access at Home

Among this low-income population, 38 percent of baseline respondents did not have a computer in the home; 54 percent reported not having Internet access in the home. As would be expected, Web responders during sample maintenance were significantly more likely to have Internet access in the home ($p \leq .05$). Interestingly, however, among those who did not have Internet at baseline, 12 percent used the Web to update their contact information at some point during sample maintenance.

Those who did not have Internet access at home at baseline made up one-third of the total number who have used the Web to update their contact information. Even at the first round of sample maintenance—only 6 months after the baseline survey—13 percent of those who used the Web to update contact information did not have the Internet in their home at the time of the baseline survey. Exhibit 11 shows an upward trend over time, with the exception of a slight decrease during the most recent round.

Exhibit 11. Percent of Web Responders Without Internet Access in the Home at Baseline



Summary and Conclusions

This paper has investigated characteristics of survey respondents who responded via Web and other methods to requests for updated contact information, focusing on low-income sample members. Our analysis is based on a sample that is not representative of the general population (e.g., 92 percent of the sample is female and the average age of sample members is 30), but provides important information about Web vs. non-Web responders among low-income households.

We begin by concluding that offering a Web option is cost efficient and worthwhile. Establishing a secure Web site for sample members to use costs a relatively small amount of money, especially when compared to the costs of repeated mailings, telephone calls, and visits to sample member homes. Although the number who reply by Web has not yet exceeded more than a few dozen, we judge the method to be a good way to enable participation.

Perhaps because the sample is relatively homogeneous to begin with (all parents of Head Start children, all living within a general geographic area), an examination of demographic characteristics among sample maintenance responders shows some differences between those who use the Web and those who respond through mail, phone, or in-person options. Web responders are more likely to be white, have at least some college education, range in age from 25–34, and have an annual household income over \$15,000.

The follow-up survey scheduled for fall 2008 will allow us to pose questions to expand our understanding of Web responders. Based on findings from analyses reported in this paper, we intend to further examine the following items.

We are intrigued that the proportion of first-time Web responders remained above 50 percent for every round of sample maintenance, showing a large turnover in Web respondent at each time. Several possible reasons could account for this figure: (1) respondents do not like their Web experience when they update their contact information, (2) the novelty of using the Web to update information may wear off rather quickly, and (3) the respondent may simply choose the most convenient method. Further study is needed to determine if one of these factors accounts for this phenomenon.

We are also interested in the finding that the lack of Internet access in the home at baseline did not preclude respondents from using the Internet to update their contact information. These respondents may have recently arranged to have Internet access at home or can access it at work, someone else's home, the library, or some other location.

One of the more interesting findings is the increase in lower-income respondents' use of the Web; they now use the Web more than higher-income respondents. We speculate more such respondents may have Internet access at home (especially since their focal children are now school-aged) or more may be working at jobs with Internet access (again, now that at least some children are in full-day schooling).

References

Andrews, D., B. Nonnecke, and J. Preece, "Electronic Survey Methodology," *International Journal of Human-Computer Interaction*, Vol. 16, No. 2, 2003, pp. 185-210.

Benfield, J.A. and W.J. Szlemko, "Internet-based Data Collection: Promises and Realities," *Journal of Research Practice*, Vol. 2, No. 2, Article D1, retrieved September 4, 2007, from <http://jrp.icaap.org/index.php/jrp/article/view/30/51>.

Contrino, H.C., S. Echevarria-Cruz, and J. Shlyemovich, "Potential Utility of Web Based Data Collection Options," presented at the 2005 FCSM Conference, November 14, 2005, Arlington, VA.

Dillman, D.A., *Mail and Internet Surveys: The Tailored Design Method*, John Wiley & Sons, New York, 2000.

The 2007 Statistical Abstract, Households With Computers and Internet Access by Selected Characteristic: 2003
http://www.census.gov/compendia/statab/information_communications/internet_access_and_usage, (accessed September 6, 2007).

U.S. Bureau of the Census. "State and County Quickfacts." U.S. Census.
<http://quickfacts.census.gov/qfd/states/26/26125.html> (accessed August 2, 2007).