

PRELIMINARY EVALUATION OF
MAXIMUM TELEPHONE INTERVIEWING ON THE SIPP
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I. INTRODUCTION

The Survey of Income and Program Participation (SIPP), is a nationwide longitudinal household survey which is designed to provide comprehensive information on the economic situation of households and persons in the United States. The SIPP collects information on cash and noncash income, eligibility and participation in various government transfer programs, labor force status, assets and liabilities, and many other topics for multiple purposes such as learning how changes in people's lives affect their economic well-being.

When the SIPP was started, it was generally believed that the only way to effectively collect the complex and sensitive SIPP data was through personal visit interviewing. As a result, telephone interviewing is conducted only when an interview can not be conducted in person and the field representative has supervisory approval. In fact, about 95.5 percent of all SIPP interviews were conducted by personal visit (Kalton, et. al., 1986). However, in a continuing effort to make the SIPP design more efficient, and with the approval and encouragement of the Office of Management and Budget, the Census Bureau began exploring the use of telephone interviewing in the SIPP in 1985 by conducting a small pretest and then a two-phased national level experiment.

This paper first provides an overview of the SIPP design, the pretest, the two phases of the national level experiment, and the analytic procedures (Section II). The paper then provides results from the analyses completed thus far for the national level experiment (Section III). Finally, there is a discussion of the preliminary results and conclusions (Section IV).

II. OVERVIEW

A. The Survey of Income and Program Participation

The SIPP is a multistage stratified sample of clusters of housing units drawn from the noninstitutionalized resident population of the United States. Interviewing for the first panel (i.e. sample), the 1984 panel, began in October 1983. A second panel, the 1985 panel, was introduced in February 1985. Thereafter, a new panel is introduced in February of each year. Beginning with the introduction of the 1985 panel, the SIPP has had two or three panels in the field concurrently.

Each panel is interviewed once every four months for about two and one-half years and is divided into four approxi-

mately equal subsamples, called rotation groups. One rotation group is interviewed per month. Thus, one cycle, or wave, of interviewing (using the same questionnaire) usually takes four consecutive months to complete. The 1984 through 1986 panels each have one "short" wave which only has three rotations. Wave 3 is the short wave for the 1986 panel. At each interview, respondents are asked a core set of questions about their income and labor force and program participation during the previous four-month period. At Waves 2 and beyond of each panel (Waves 3 and beyond for the 1984 panel), respondents are also asked a set of topical module questions which vary by wave. A detailed description of the SIPP is given in Nelson et. al., (1985).

B. Testing Maximum Telephone Interviewing

1. Pretest

A pretest conducted in June 1985 demonstrated that telephone interviewing using the SIPP questionnaire was feasible. A description of the pretest and its results are given in Durant and Gbur (1988).

2. National Level Experiment

The objective of the national level experiment was to determine whether a nationwide sample of live SIPP households could be interviewed by telephone while maintaining data quality. To achieve this, a representative sample was to be interviewed by telephone using the appropriate wave's questionnaire and the completed questionnaires subjected to our regular and rigorous clerical and computer edits. The results were compared to a sample which was to be interviewed by personal visit. In addition, some indication as to the effect of telephone interviewing on cost was desired.

For the months of the experiment, half of the SIPP sample households were designated as maximum telephone interview cases, and half as maximum personal interview cases. For maximum telephone interview designated cases, field representatives were directed to obtain interviews by telephone if at all possible. However, the critical point was to obtain the interview - even if it required not using the telephone. Maximum personal visit interviewing was to be done similarly. Field representative assignments were made without regard to the amount of SIPP or telephone interviewing experience, or whether cases were designated for maximum telephone or personal visit

interviewing. Each field representative completed a telephone self-study prior to beginning his/her telephone assignment.

The telephone interviews were conducted from field representatives' homes (i.e. decentralized) and respondents were mailed letters to let them know that their next interview may be by telephone and to provide them with flashcards. Although there were no specific rules for maximizing self-response, field representatives were instructed to use the same procedures for both telephone and personal visit interviewing.

a. Phase I

Phase I was conducted during the 1986 panel using households interviewed in two months of Wave 2 (August and September, 1986) and in two months of Wave 3 (October and November, 1986). Field representatives were expected to use the designated mode for the interview unless prior permission to change the mode was given by their supervisor.

A debriefing form to be completed at the conclusion of the Phase I assignments was given to each field representative assigned telephone designated cases. The debriefing form asked for a summary of the interview status for assigned households and general comments. The field representatives' stated that: (1) respondents often did not use the flashcards which were provided as an interviewing aid; (2) household size should be a factor in deciding whether to interview by phone; and (3) field representatives (or the respondents) should be given the choice as to which mode to use. Details of the debriefing results are given in Durant and Gbur (1988).

b. Phase II

Since a major characteristic of the SIPP is its longitudinal design, it is important to maintain a good rapport with respondents over the life of a panel. It was not known whether or not households which had been interviewed by telephone at Waves 2 or 3 would be cooperative if they were contacted again by telephone (with, at the most, one intervening personal interview) for Wave 4. Therefore, Phase II was conducted to: (1) determine the effect of multiple telephone interviews on willingness to furnish the requested data and on data quality; (2) obtain some information on whether telephone interviewing would result in cost savings to the survey; and (3) allow observation of the effect upon maximum telephone interviewing of having three panels in the field at the same time.

For Phase II, a representative sample of households in three of the four 1986 panel Wave 4 rotations (interviewed in February-April, 1987) were targeted for maximum telephone

interviewing. Households in two of the three rotations had been designated for telephone interviewing during Wave 3, while households in the other rotation had an intervening personal visit interview in Wave 3 after being designated for telephone interviewing in Wave 2.

In response to the Phase I debriefing results, field representatives were given more flexibility in deciding the interview mode for telephone designated cases for Phase II. Whereas the personal visit designated cases were to be completed in person (unless a prior arrangement was made with the household or supervisor to conduct the interview by telephone), the telephone designated cases could be conducted by telephone or personal visit, at the discretion of the field representative. However, written justification had to be provided afterwards to the supervisor.

C. Analytic Procedures

The telephone experiment was designed to compare the designated interview modes rather than the modes by which the interview was executed since, if the SIPP went to maximum telephone interviewing, there would still, by necessity, be some personal visit interviewing. Differences in summary statistics, nonresponse rates, and data quality estimates between the designated interview modes were tested at the 10 percent level of significance with chi-square tests for distributions and t-tests for proportions and medians. For comparisons of unweighted estimates, design effects were used to adjust the simple random sample variance for the complex sample design. Sampling errors of the weighted estimates were calculated using generalized variance parameters estimated for the SIPP and adjusted for the experimental design.

Many of the estimates analyzed for item nonresponse and data quality are not disjoint. Thus, a statistically significant result for one estimate may result in a significant result for another estimate.

For the discussion on item nonresponse, refusal rates were calculated only for those items for which the questionnaire included "refusal" as a possible response.

Because data presented in the tables were obtained during different points of the data processing and editing procedures, there may be some discrepancies between tables. However, general results are expected to be the same were all data obtained at the same point.

III. RESULTS

A. Costs

Since a major attraction of telephone interviewing is potential cost savings, some attempt was made to

evaluate the impact on costs of the increased usage of the telephone during the experiment. However, as the cost evaluation was a secondary objective, and little additional burden could be placed on the field representatives, data at the level of detail required for an appropriate cost analysis could not be collected for either Phase I or II. This, in addition to an apparent problem in the cost reporting and extraneous factors, yielded inconclusive results from the Phase I cost analysis.

However, the Phase II results suggest that telephone interviewing may save time and reduce costs. There were increased workloads during Phase II (two panels were in the field for Phase I and three for Phase II) which may be at least partially responsible for this finding. (Gbur, 1987).

B. Summary Statistics

Comparisons of interviewed household weighted summary statistics (household size distributions, self/proxy response rates, and proportion of households with noninterviewed persons) were made for Phases I and II. For these statistics, there are no statistically significant differences between the estimates for the telephone and personal visit designated cases.

Although not statistically significant, the proxy interview rates are higher for telephone designated cases (35.3 versus 37.7 percent and 36.7 versus 38.1 percent for Phase I and II, respectively). Higher proxy rates may lead to greater bias in the survey estimates.

C. Nonresponse

Survey estimates may be biased as a result of nonresponse. Cross-sectionally in the SIPP, there is household, person, and item nonresponse.

1. Household / Person

Telephone interviewing may increase both type A and D household nonresponse. Type A nonresponse households include refusal, no one at home, temporarily absent, unable to locate, and other miscellaneous nonresponse. Type D nonresponse occurs when all members of a household move to an unknown address or within the country over 100 miles from a SIPP sample area and can not be contacted by telephone.

Type A nonresponse rates are provided in table 1 for each interview month of Phases I and II by designated interview mode. There are no statistically significant differences between the designated modes. Although not significant, the type A nonresponse rates for telephone designated cases are numerically lower for three of the four months for Phase I and one of the three months for Phase II. Similarly Type D nonresponse rates are numeri-

cally lower for one month each of the four and three months of Phases I and II, respectively. Thus, there is no statistical evidence at the national level that household nonresponse is increased with use of the telephone.

In interviewed households, some persons may be nonrespondents as a result of refusal or unavailability. Since it may be easier for a respondent to refuse an interview over the telephone, there was concern that person nonresponse would increase by telephoning. Although the percentage of person nonresponse in telephone designated households is higher than that in personal visit designated households (2.7 versus 2.5 percent and 3.5 versus 3.4 percent for Phase I and II, respectively), the difference is not significant.

2. Item

The failure of an otherwise cooperative respondent to respond to a particular item is a concern for all surveys. Of the labor force and income item nonresponse rates examined, the rates for telephone designated interviews are not significantly different from the personal visit rate for any of the items for Phase I. For Phase II, only the nonresponse rate for hours worked per week and the amount of dividend income credited to an individual account were significantly different. The labor force item nonresponse rates were less than 0.053 and 0.133 for Phases I and II, respectively. For the income item nonresponse rates, see table 2. Although the individual differences are not necessarily significant, item nonresponse rates for telephone designated cases were higher than those for personal visit designated cases for a total of 29 and 23 of the 32 items in Phases I and II, respectively.

Item nonresponse may occur as a result of respondent refusal, the respondent not knowing the answer (or being unwilling or unable to retrieve records), or the failure of the interviewer to follow the correct skip pattern. Comparison of refusal rates for income items showed no significant differences between personal visit and telephone designated interviews for Phase I and only the amount of dividend income credited to an individual account is significantly different for Phase II. Although not necessarily individually significant, refusal rates for telephone designated cases are higher for 15 and 14 of the 21 items for which refusal rates were calculated in Phases I and II, respectively. Since the other item nonresponse reason categories comprise only a small percent of nonresponse, they were not analyzed.

Overall, telephone designation has

no statistical effect on item nonresponse rates. However, the variances on the estimates are large. Additionally, a large number of item nonresponse rates are numerically higher for telephone designated cases.

D. Cross-Sectional Estimates

As a measure of data quality, cross-sectional estimates of reciprocity, low income status, and median monthly income (tables 3 through 5) were compared by designated interview mode. Of the 53 estimates examined (not all are presented in the tables), 7 and 13 exhibit statistically significant differences between modes for Phases I and II, respectively. Most of the significant differences (6 and 11 for Phases I and II, respectively) are among the 23 reciprocity and low income status items. Thus, the number of observed significant differences between estimates for telephone and personal visit designated cases is greater than would be expected by chance for Phase II but not for Phase I. However, there is probably a high correlation among the estimates examined.

A higher proportion of the estimates for personal visit designated cases are greater (not necessarily significantly) than those for telephone designated cases than would be expected by chance. Also, the differences tend to be numerically greater in Phase II than Phase I.

Estimates for telephone seem to be lower than those for personal visit designated cases for reciprocity of means tested benefits (except for female headed and Spanish households) and for household income of households receiving a selected income source.

E. Future Analysis

Further analysis of the data is required before any final statement can be made on the effect of telephone interviewing on the SIPP. A major part of the cross-sectional analysis which remains to be completed is analysis of topical module data. In addition, future analysis will include calculation and comparison of cross-sectional bivariate correlations and a variety of longitudinal estimates by mode. All of the above analyses will be performed as the data are processed and become available.

IV. CONCLUSIONS

For some surveys, telephone interviewing has been an effective mode for obtaining quality data and reducing survey costs. Further analysis of the SIPP data is needed to determine whether this is the case for the SIPP. Any final decision on whether and how telephone interviewing should be implemented in the SIPP will depend not only on the SIPP telephone experiment results but also on experiences from the use of maximum telephone interview-

ing for other Census Bureau surveys.

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For the following tables '*' indicates that the estimate is significantly different from the personal visit estimate at the 10% level.

Table 1: Percentage of Household Type A Nonresponse by Month and Designated Interview Mode-SIPP National Telephone Experiment

	Personal Visit		Telephone	
	Base	%	Base	%
Wave 2				
August	1537	5.7	1404	4.1
Sept	1438	4.7	1474	3.7
Wave 3				
Oct	1607	5.9	1459	4.9
Nov	1536	4.6	1437	5.6
Wave 4				
Feb	1631	4.8	1481	4.6
March	1562	4.5	1462	4.8
April	1585	3.4	1447	3.9

Table 2: Item Nonresponse Rates for Item / Respondent Type by Designated Interview Mode and Phase
SIPP National Telephone Experiment

Item / Respondent Type	Phase I				Phase II			
	Personal Base	Visit Rate	Telephone Base	Telephone Rate	Personal Base	Visit Rate	Telephone Base	Telephone Rate
Hourly wage rate								
Total	4038	0.114	3671	0.122	2875	0.117	2459	0.118
Self	2402	0.065	2080	0.073	1698	0.073	1410	0.074
Proxy	1636	0.186	1591	0.187	1177	0.181	1049	0.177
Monthly wage and salary income								
Total	6185	0.090	5769	0.094	4611	0.081	4129	0.090
Self	3857	0.060	3447	0.059	2829	0.054	2509	0.061
Proxy	2328	0.138	2322	0.145	1782	0.125	1620	0.133
Self employment income								
Total	684	0.154	681	0.185	551	0.125	455	0.158
Self	417	0.110	410	0.132	354	0.085	273	0.128
Proxy	267	0.221	271	0.266	197	0.198	182	0.203
Interest earning assets								
Interest-joint	2142	0.299	2055	0.320	1652	0.318	1426	0.310
-individual	3304	0.345	3235	0.347	2543	0.362	2312	0.375
Balance-joint	456	0.346	473	0.374	367	0.251	318	0.264
-Individual	857	0.326	844	0.346	705	0.271	689	0.269
Other interest earning assets								
Interest-joint	191	0.382	193	0.409	149	0.403	136	0.434
-Individual	337	0.323	297	0.394	248	0.395	214	0.444
Balance-joint	54	0.426	53	0.566	40	0.375	37	0.378
-Individual	73	0.370	81	0.568	68	0.309	72	0.375
Dividend income								
Received-joint	328	0.146	317	0.189	279	0.129	247	0.142
-Individual	819	0.094	869	0.135	689	0.087	696	0.114
Credited-joint	238	0.399	233	0.408	194	0.309	200	0.330
-Individual	562	0.322	572	0.304	459	0.192	469	0.271 *

Note: "Interest earning assets" includes savings accounts, money market deposit accounts, certificates of deposit, and NOW accounts.

Table 3: Recipiency Rate After Imputation by Designated Interview Mode - SIPP National Telephone Experiment

Income Source	Phase I		Phase II	
	Personal Visit	Telephone	Personal Visit	Telephone
Wage and Salary Income	54.9	54.7	47.4	54.5 *
Self Employment Income	5.1	5.9 *	4.4	5.5 *
Social Security and Railroad Retirement	19	19.5	16.1	19.6 *
SSI - Federal	2.4	1.8 *	2.0	1.8
Unemployment	1.3	1.2	1.1	1.1
AFDC or General Relief	2.2	2.1	2.0	2.4
Food Stamps	3.8	3.5	3.5	3.4

Bases: Phase I Designated Personal Visit - 188672
Phase I Designated Telephone - 176543
Phase II Designated Personal Visit - 192899
Phase II Designated Telephone - 171939

Table 4: Household Reciprocity Rate of Means Tested Benefits (MTB) and Household Low Income (Cash Only) (LICO) Rate by Demographic Characteristics, Designated Interview Mode, and Phase - SIPP National Telephone Experiment (Estimates in Thousands)

	Base		MTB Rate		LICO Rate	
	PV	Tele	PV	Tele	PV	Tele
Phase I						
Total	88763	85818	0.167	0.154 *	0.131	0.127
Female Headed						
Household	6701	6040	0.528	0.550	0.437	0.456
Other	82062	79778	0.138	0.124 *	0.106	0.102
White	76463	74585	0.130	0.124	0.101	0.105
Black	10260	9459	0.439	0.372 *	0.342	0.279 *
Spanish	5690	5003	0.323	0.326	0.206	0.258
Metropolitan	66968	68687	0.155	0.146	0.115	0.116
Non-metropolitan	21796	17131	0.205	0.186	0.180	0.168
Phase II						
Total	91534	84166	0.193	0.182	0.137	0.120 *
Female Headed						
Household	6667	6108	0.540	0.608	0.445	0.425
Other	84867	78058	0.166	0.149 *	0.113	0.096 *
White	79745	72433	0.157	0.147	0.111	0.097 *
Black	9829	9935	0.475	0.421 *	0.339	0.277 *
Spanish	6309	4751	0.353	0.449 *	0.186	0.268 *
Metropolitan	68259	67401	0.173	0.169	0.118	0.107
Non-metropolitan	23275	16765	0.252	0.238	0.194	0.170

PV - Personal Visit
Tele - Telephone

Table 5: Median Monthly Average Household Income by Demographic Characteristics, Income Sources, Designated Interview Mode, and Phase - SIPP National Telephone Experiment

Characteristic	Phase I				Phase II			
	Personal Income	Visit SE	Telephone Income	Telephone SE	Personal Income	Visit SE	Telephone Income	Telephone SE
Total	1924	36	1956	39	1950	41	1997	38
Female Headed								
Household	966	65	905	71	1004	83	952	80
Other	2026	27	2051	28	2039	31	2079	33
White	2027	28	2054	30	2043	31	2098	34
Black	1151	68	1229	52	1178	74	1266	52
Spanish	1587	76	1383	124	1737	88	1413	116 *
Metropolitan	2065	32	2067	31	2104	36	2108	38
Non-metropolitan	1523	49	1525	56	1500	54	1555	56
1+ Received Benefits	1228	28	1157	34	1303	34	1241	32
No Means Tested								
Benefits	1323	36	1281	35	1391	43	1342	42
Social Security or								
Railroad Retirement	1206	35	1168	38	1285	39	1224	40
Unemployment	1661	129	1553	164	1915	171	1646	182
Means Tested Benefits	717	38	703	29	846	52	815	46
AFDC or general relief	489	38	476	40	492	45	462	40
Food Stamps	439	20	454	25	457	24	429	23
Medicaid	604	40	601	33	641	47	605	44
Public Housing	561	45	579	45	607	59	543	52
No Benefits Received	2511	37	2542	36	2545	42	2615	42

SE - Standard Error