

Joyce A. Stevens and Barbara A. Bailar, U.S. Bureau of the Census *

Introduction

In a supplement to the Current Population Survey (CPS), income data are collected each March. Some interviewers are more successful than others in eliciting responses to income questions. This study is a preliminary attempt to determine if specific interviewer characteristics or attitudes are related to the successful collection of income data in the CPS March Supplement.

Methodology

The best method to have used to develop relationships between interviewer characteristics and the successful collection of income data would have been by means of a controlled experiment in which households would have been randomly assigned to interviewers of different types. It was not possible to do this kind of experimentation in the CPS; therefore, a different kind of project was carried out.

Every CPS interviewer who had worked on the March 1975 CPS Supplement was sent a questionnaire. The questions asked included the interviewer's age, educational level, and family income; whether the interviewer was more at ease about asking certain types of income questions; whether the respondents were more cooperative about answering certain types of income questions; whether the respondents understood the different types of income questions; whether the respondents had the information available to answer the income questions; and whether the interviewers felt it was appropriate for the Census Bureau to ask about certain subjects. The results from this questionnaire were linked to selected items from the March 1975 CPS Income Supplement. These items included nonresponse rates for different income questions, measures of nonprobing for income data, and some characteristics of the interviewer's assignment area. Thus, the new record created for each interviewer contained the answers to the questions about the interviewer's characteristics, attitudes, and opinions, and the nonresponse rates and nonprobing rates that the interviewer achieved on the March 1975 Income Supplement.

Two measures of the interviewer's "success" in collecting income data are used in this analysis. They are the nonresponse rates by type of income, for households and for persons, and the nonprobing rates by type of income for persons. Nonprobing for Social Security and interest income is said to have occurred when the annual dollar amount reported is exactly divisible by four. Should an interviewer accept a quarterly (or monthly) dollar amount and multiply by four (or 12) to arrive at an annual figure instead of probing to determine if the same amount of money were received in each quarter (or month), an incorrect annual total would result. For example, there was a change in the Social Security benefit payment in July,

1975. If the respondent multiplied his most recent payment by 12 to arrive at an annual figure, the annual amount would be incorrect. Since a generalized technique for determining nonprobing for all kinds of income items was desirable, divisibility by four was used as the criterion for nonprobing.

There are certain limitations to this analysis. First the nonresponse and nonprobing rates do not relate directly to the quality of the income data collected. For instance, an interviewer could have no nonresponses but the reported amounts could be inaccurate. Second, since a randomized controlled study was not the method used, no causal relationships can be inferred. All that can be asserted is that relationships between variables do or do not exist. Third, when an interviewer was asked her opinion or attitude about an event pertaining to all respondents, a particularly unusual occurrence could influence her answer. For example, the memory of a particularly unpleasant refusal may have influenced the interviewer to report that more people were uncooperative in 1975 than in the past when that may not have been the case.

The universe for this study consists of all of the CPS interviewers who worked on the March 1975 Income Supplement and who contacted at least 10 households. However, some interviewers did not return a questionnaire and some who returned one did not sign their names. About 85 percent of the CPS interviewers who worked on the March Supplement completed the attitude questionnaire. About 81 percent signed their names. Because it was necessary to have their names for matching the interviewer data from the two sources, 81 percent was the resultant success rate. Thus, 802 interviewers had matched data available. This group is regarded as the population and no sampling errors are calculated since all differences are regarded as differences occurring in the population.

Since it is possible that those interviewers who refused to fill out or sign the questionnaire were different from those who did, a comparison of the two groups was made for selected items of information from the March Supplement. Table 1 shows this comparison.

Very few differences are apparent. The nonrespondents may have had somewhat more black households, more Spanish-speaking households, and more elderly households. They had somewhat more households not reporting dividends or interest. However, the assignment sizes were about the same, or somewhat smaller and the percentage of self-respondents was about the same. Of course, a similarity between those who cooperated and those who did not on this set of items does not mean that there was a similarity for other types of items that are presented in this paper.

Attitude Survey - Capsule of Findings

The interviewer survey indicated that the "average" CPS interviewer was a 48-year old married woman who was a high school graduate and had a family income of about \$17,000. About 80 percent of the interviewers had worked on the March Supplement at least twice. Those interviewers who had previous experience with the March Supplement were asked if they noticed any change in respondent attitudes towards asking income questions in the past year or two. Just under a half said they found respondents less cooperative, nearly two-fifths found respondents about the same, and approximately one-tenth found respondents more cooperative. (Fewer than one out of every 20 interviewers mentioned a difference but did not say in which direction.)

March 1975 CPS - Capsule of Findings

Item by item nonresponse rates were tabulated for two different universes, for persons and for households, and for three categories of income: interest income, Social Security income, and income other than wages and salary. Among the major items included in income other than wages and salary are Social Security, Railroad Retirement, Supplemental Security Income, interest, dividends, royalties, estates or trusts, rental income, self-employment income, farm income, welfare, unemployment, and alimony. For the sake of brevity, income other than wages and salary will be referred to as "other income" and "Social Security income" will be used to mean Social Security, Supplemental Security, and Railroad Retirement income, unless otherwise indicated. Similarly, "interest" will refer to interest, dividends, royalties, estates or trusts, and rental income.

Person nonresponse rates varied only from 7.8 percent for those who had Social Security income but gave no amount, to 9.9 percent for persons with interest but with one or more interest items not reported. The percentage of households with one or more "other income" items not reported was 16.2 percent. (These nonresponse rates do not include noninterview cases for which there was no response to the entire questionnaire.) Although there are other causes or factors contributing to nonresponse, for this analysis, it is assumed that the level of the nonresponse rate is a function of the interviewer.

Another set of items which is assumed to be a function of the interviewer is the nonprobing rate. The nonprobing rate varied from 9.6 percent for Social Security items to 12.3 percent for interest items.

Matched File (Attitudes & March Supplement) - Findings

Table 2 shows the average nonresponse and nonprobing rates for selected income items by interviewer characteristics. Except for the group of interviewers 55 years of age or older, no apparent relationship between nonresponse or

nonprobing and age exists. For this one age group, there seems to be a general tendency for lower nonresponse and nonprobing rates.

When the nonresponse and nonprobing rates were compared for interviewers with different levels of educational attainment, it was found that those interviewers who had completed 4 or more years of college had higher rates than interviewers with less than a college degree.

Several interesting relationships appear when the interviewer's family income level is crossed separately by measures of nonresponse and nonprobing, and by the characteristics of the area in which the interviewer worked. High income interviewers (interviewers whose family income was \$25,000 or more) had the highest nonresponse and nonprobing rates of all interviewers. This finding may be correlated with the high nonresponse and nonprobing rates associated with highly educated interviewers. The higher nonresponse rates for high income interviewers cut across all kinds of income and, presumably, across all respondent income levels. For instance, the high income interviewers had the highest nonresponse rates for household other income, for persons with pensions (private, military, State and local government pensions; alimony, child support, or other regular contributions) and for persons on welfare (AFDC). The nonresponse rates appear to be a function of the interviewer, and not the area. While the high income interviewers had high nonresponse rates for welfare income, their total household assignments had low percentages of households in poverty and households with Negro heads, as can be seen in Table 2.

Multiple sources of income, such as interest, dividends, and royalties, are associated with high income areas. An interviewer who works in an area with a high percentage of multiple sources of income has more chances to make errors than the interviewer who works in an area where one source of income predominates. As shown in Table 2, the high income interviewers worked in areas with the highest mean income and with the highest percentage of respondents who had multiple sources of income. It is possible, then, that the high income interviewers had high nonresponse rates because of the many chances to make errors.

An experienced interviewer is generally believed to collect better data. To see if such a relationship exists for income data, the number of times an interviewer worked on the March Supplement was crossed by her nonresponse and nonprobing rates from the 1975 March CPS. The interviewers who worked on the March CPS for the first time in 1975 had the lowest nonresponse rates. The interviewers who had interviewed on three March Supplements had the highest nonresponse rates. Those who had worked on the March CPS the longest (four or more times) had rates similar to those who had interviewed twice on the March Supplement. These latter nonresponse rates were slightly lower than those for interviewers who had interviewed three times. Length of experience did not seem to be associated with nonprobing.

It is possible that the first time interviewers being freshly trained were full of zeal and paid particular attention to detail. Those who had worked on four or more CPS Supplements may represent a mixed group: persons who were very dedicated and precise, and those who were indifferent. Further work is needed to break out the differences in the more experienced group. It appears, though, that the high nonresponse rates may again be more a function of the interviewer than of the area. The interviewers who had worked four or more times had the lowest percentage of persons with multiple sources of income. Thus, it may be that they did not ask about some sources of income.

If, in fact, a high nonresponse rate was more a function of the interviewer than of the areas in which she worked, correlations between the interviewer's attitudes and her nonresponse rates should be very informative. Because of space limitations it is not possible to analyze all of the available relationships between attitudes and nonresponse and nonprobing rates. A small subset illustrates the relationships.

Interviewers were asked if they thought it were appropriate for the Census Bureau to ask about a large number of items. Included were sources and amounts of income. Almost all of the interviewers who felt the source was appropriate also felt that the amount was appropriate to ask. The same was true for those who felt it was inappropriate, had no opinion or did not answer the question.

As is shown in Table 2, those who found asking amount or source of income inappropriate were more likely to have higher nonresponse rates. However, there was no relationship between their attitude about the appropriateness of the question and the nonprobing rates. One difficulty with this study is that there is the tendency to infer a causal relationship between the interviewers' attitude that it is not appropriate to ask income questions and the "resultant" higher nonresponse rates. However, it may have been that several refusals to those questions caused the interviewers to feel that the questions were inappropriate.

Interviewers were also asked whether they noticed if there were differences in the cooperation of respondents depending on respondent income level, and, if so, which group they found least cooperative. About 35 percent of the interviewers found the high income respondents to be least cooperative while only 8

percent found the low income group to be the least cooperative and 21 percent thought the average income group was least cooperative. About 36 percent noticed no difference or did not answer the question. Those interviewers who perceived the average income group to be the least cooperative had slightly higher nonresponse rates.

Another question asked of the interviewers was whether they noticed a change in the respondents' attitudes according to whether they were asked about certain types of income. They could answer that the respondents' attitudes were the same as towards other income questions, that respondents were more cooperative, less cooperative, or that the interviewers could not tell. Of those interviewers who could tell about a respondent's attitude, the interviewers who said respondents were less cooperative toward interest questions had the highest nonresponse rates. The same was true for questions about dividends. There appeared to be no difference in the nonprobing rates. It should be noted that the percentage of persons with one or more interest items not reported is directly related to the nonresponse rates for the separate attitude questions on interest and on dividends; and the percentage of households with one or more other income items not reported includes households with one or more interest and dividend income items not reported.

Perception of respondent attitudes was also related to the collection of Social Security income. However, the differences between groups of interviewers was not as great as those for dividends and interest income. The percentage of persons not reporting Social Security and Supplemental Security Income corresponds directly to the questions on the respondents' attitudes toward Social Security and Supplemental Security Income. The interviewers who said that respondents seemed to be less cooperative toward Social Security income questions had slightly higher nonresponse rates, but the interviewers who said that respondents seemed to be less cooperative toward Supplemental Security Income questions had slightly lower nonresponse rates. Again, there appeared to be no differences in the nonprobing rates.

This paper represents a small fraction of the data available from this project. Further exploration of the association of interviewer attitudes and characteristics, as well as area characteristics, with the quality of income data will take place over the coming year.

TABLE 1.--A COMPARISON OF SELECTED ITEMS FROM THE
MARCH 1975 CPS SUPPLEMENT FOR INTERVIEWERS WHO COMPLETED A
SURVEY FORM AND THOSE WHO DID NOT

Interviewer assignment characteristics	Percent of CPS interviewers	
	Who completed and signed a questionnaire (N = 802)	Who did not complete or did not sign a question- naire (N = 189)
<u>Number of households in assignment:</u>	<u>100.0</u>	<u>100.0</u>
One to 19	3.9	3.2
20 to 39	22.8	27.5
40 to 59	59.2	54.5
60 or more	14.1	14.8
<u>Percentage of black household heads:</u>		
0.0 to 4.9	59.3	55.6
5.0 to 19.9	24.9	27.0
20.0 or over	15.8	17.5
<u>Percentage of households with Spanish speaking head:</u>		
0.0 to 4.9	72.6	69.8
5.0 to 19.9	17.9	18.5
20.0 or over	9.5	11.6
<u>Percentage of household heads 65 or over:</u>		
0.0 to 9.9	13.8	9.6
10.0 to 24.9	59.5	61.7
25.0 or over	26.7	28.7
<u>Percentage of telephone inter- views:</u>		
0.0 to 9.9	9.6	7.4
10.0 to 29.9	16.4	19.6
30.0 to 49.9	22.4	24.3
50.0 to 69.9	35.0	36.5
70.0 or more	16.6	12.2
<u>Percentage of poverty households:</u>		
0.0 to 9.9	45.7	41.3
10.0 to 19.9	35.7	41.3
20.0 or over	18.6	17.5
<u>Percentage of households not reporting interest or dividends:</u>		
0.0 to 4.9	30.5	28.0
5.0 to 14.9	48.2	46.0
15.0 to 24.9	15.6	18.5
25.0 and over	5.7	7.4
<u>Percentage of self-respondents:</u>		
25.0 to 49.9	86.8	85.7
50.0 or more	13.2	14.3

TABLE 2.--AVERAGE NONRESPONSE AND NONPROBING RATES FOR SELECTED INCOME ITEMS, OR AVERAGE AREA CHARACTERISTICS BY INTERVIEWER CHARACTERISTICS

Percentage of persons or households of specific type	Interviewer characteristic					
	AGE					
	Total ^{1/} (802)	25-34 (67)	35-44 (221)	45-54 (345)	55 or over (166)	
Households, 1+ other income item NA	16.2	16.8	16.2	16.5	15.2	
Persons, interest and/or dividends NA	9.9	10.5	10.2	10.2	8.8	
Persons, interest and/or dividends NP	12.3	12.2	12.2	12.5	12.0	
Persons, Social Security items NA	7.8	7.5	8.0	8.3	6.8	
Persons, Social Security items NP	9.6	9.4	9.4	9.8	9.6	
	EDUCATION					
	Total ^{1/} (802)	1 to 11 years (26)	12 years (410)	College 1 to 3 years (235)	College 4 years or more (128)	
Households, 1+ other income items NA	16.2	17.1	15.9	16.1	17.3	
Persons, interest and/or dividends NA	9.9	8.6	9.6	10.2	10.2	
Persons, interest and/or dividends NP	12.3	12.5	11.9	12.0	13.8	
	FAMILY INCOME					
	Total ^{1/} (802)	Less than \$10,000 (139)	\$10,000 to \$14,999 (161)	\$15,000 to \$19,999 (202)	\$20,000 to \$24,999 (176)	\$25,000 or more (115)
Households, 1+ other income items NA	16.2	14.8	16.1	16.6	15.1	19.0
Persons, interest and/or dividends NA	9.9	8.8	9.7	10.4	9.4	11.3
Persons, interest and/or dividends NP	12.3	10.9	12.3	11.9	12.7	14.1
Persons, Social Security items NA	7.8	6.8	7.6	8.2	7.7	8.9
Persons, Social Security items NP	9.6	9.5	9.9	9.9	9.4	9.0
Persons, pensions, alimony items NA	7.1	6.7	6.6	7.4	6.6	8.4
Persons, welfare items NA	6.8	6.2	6.3	7.3	6.3	8.2
Persons with multiple income sources	36.7	35.6	36.5	36.0	37.6	38.2
Households in poverty	12.5	14.7	13.2	12.4	12.3	9.7
Households, black head	8.1	8.2	9.0	8.5	8.0	6.3
Average household income	12,470	11,815	11,485	12,425	12,657	13,862
	YEARS OF EXPERIENCE WITH MARCH SUPPLEMENT					
	Total ^{1/} (802)	1975 first time (165)	Second time (125)	Third time (133)	Fourth time or more (376)	
Households, 1+ other income items NA	16.2	13.8	16.6	17.9	16.4	
Persons, interest and/or dividends NA	9.9	8.5	10.0	11.0	10.0	
Persons, interest and/or dividends NP	12.3	12.6	12.0	12.9	12.2	
Persons, Social Security items NA	7.8	6.7	7.6	9.0	8.1	
Persons, Social Security items NP	9.6	9.6	9.7	9.4	9.6	
Persons with multiple income sources	36.7	37.7	37.6	38.4	35.6	
Households in poverty	12.5	12.3	13.0	11.5	12.8	
Average household income	12,470	12,367	12,140	12,690	12,550	
	APPROPRIATENESS OF ASKING SOURCES OF INCOME					
	Total (802)	Appropriate (437)	Inappropriate (176)	No opinion or NA (189)		
Households, 1+ other income items NA	16.2	15.5	17.8	16.3		
Persons, interest and/or dividends NA	9.9	9.2	11.5	9.9		
Persons, interest and/or dividends NP	12.3	12.3	12.3	12.1		

TABLE 2.--AVERAGE NONRESPONSE AND NONPROBING RATES FOR SELECTED INCOME ITEMS, OR AVERAGE
AREA CHARACTERISTICS BY INTERVIEWER CHARACTERISTICS - continued

Percentage of persons or households of specific types	Interviewer characteristics			
	<u>APPROPRIATENESS OF ASKING INCOME AMOUNTS</u>			
	Total	Appropriate	Inappropriate	No opinion or NA
	(802)	(436)	(176)	(190)
Households, 1+ other income items NA	16.2	15.5	17.9	16.2
Persons, interest and/or dividends NA	9.9	8.5	11.6	9.9
Persons, interest and/or dividends NP	12.3	12.3	12.4	12.2
	<u>LEAST COOPERATIVE INCOME GROUP</u>			
	Total	High	Average	Low
	(802)	(283)	(169)	(63)
Households, 1+ other income items NA	16.2	16.3	17.2	15.6
Persons, interest and/or dividends NA	9.9	10.0	10.2	9.4
Persons, interest and/or dividends NP	12.3	12.6	12.2	12.3
	<u>ATTITUDE OF RESPONDENT TOWARD INTEREST QUESTIONS COMPARED WITH OTHER INCOME QUESTIONS</u>			
	Total	More cooperative or same	Less Cooperative	Can't tell or NA
	(802)	(118)	(650)	(34)
Households, 1+ other income items NA	16.2	14.4	16.5	16.1
Persons, interest and/or dividends NA	9.9	8.6	10.1	10.6
Persons, interest and/or dividends NP	12.3	12.1	12.3	12.7
	<u>ATTITUDE OF RESPONDENT TOWARD DIVIDEND QUESTIONS COMPARED WITH OTHER INCOME QUESTIONS</u>			
	Total	More cooperative or same	Less Cooperative	Can't tell or NA
	(802)	(163)	(582)	(57)
Households, 1+ other income items NA	16.2	13.5	16.7	18.2
Persons, interest and/or dividends NA	9.9	8.2	10.3	11.2
Persons, interest and/or dividends NP	12.3	11.8	12.4	12.1
	<u>ATTITUDE OF RESPONDENTS TOWARD SOCIAL SECURITY QUESTION COMPARED WITH OTHER INCOME QUESTIONS</u>			
	Total	More cooperative or same	Less Cooperative	Can't tell or NA
	(802)	(730)	(37)	(35)
Persons, Social Security items NA	7.8	7.8	9.9	7.2
Persons, Social Security items NP	9.6	9.5	9.9	10.8
	<u>ATTITUDE OF RESPONDENTS TOWARD SUPPLEMENTAL SECURITY INCOME QUESTION COMPARED WITH OTHER INCOME QUESTIONS</u>			
	Total	More cooperative or same	Less Cooperative	Can't tell or NA
	(802)	(639)	(36)	(127)
Persons, Social Security items NA	7.8	7.9	6.9	7.8
Persons, Social Security items NP	9.6	9.6	10.0	9.2

NA - Not answered

NP - Not probed

1/ Numbers may not sum to total because a few interviewers did not answer certain questions.