

AN ASSESSMENT OF THE QUALITY OF SURVEY REPORTS OF INCOME FROM THE
AID TO FAMILIES WITH DEPENDENT CHILDREN (AFDC) PROGRAM
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1. INTRODUCTION

The tendency for income to be underreported in household surveys is well known and has been the topic of considerable study. Income from public assistance programs is generally not as well reported as income from earnings or other transfer payments such as social security. This paper describes the methodology and results of an analysis undertaken as part of the Income Survey Development Program (ISDP) in order to gain a fuller understanding of the nature of response errors in recipient reports of AFDC benefits.^{1,2} It presents evidence that survey estimates of AFDC income are quite sensitive to survey design and data collection procedures.

2. STUDY DESIGN AND IMPLEMENTATION

The goal of the ISDP is to develop a large-scale national survey with improved information on cash and in-kind income, program eligibility and participation. In order to insure reliable survey estimates for relatively small population subgroups, such as participants in the AFDC program, a multiple frame sampling approach is required. This guarantees that sufficient numbers of program participants are included in the overall sample.

In the spring of 1980, a Special Frames Study was conducted in order to investigate the practical aspects of sampling from specific program record systems. The study was also designed to test the ability of the survey questionnaires to identify and properly classify various types of program participants and accurately measure the amounts of program income received. Sampled programs included AFDC, social security, veterans' payments, unemployment compensation, and worker's compensation. Probability samples were obtained from administrative records for beneficiaries living in selected counties in five States: California, Missouri, North Carolina, Pennsylvania, and Wisconsin. Not every program was sampled in every state; for example, an AFDC sample was not selected in Missouri. Only the results obtained from the AFDC sample are discussed in this paper.

Approximately 260 AFDC families were selected from the April 1980 payment files maintained by the Welfare Agency in each State. The sample was composed of 116 families in California, 54 families in North Carolina, 60 families in Pennsylvania, and 30 families in Wisconsin.

The selected assistance groups were identified and the addresses of households in which the corresponding payees lived were provided to the Census Bureau for interviewing purposes. Household interviews for all four samples were conducted in July, resulting in information on benefits that were received during April, May and June. All household members over 16 years of age were interviewed using a somewhat modified version of the questionnaire originally employed in the first wave of the 1979 ISDP Panel.³ The interviewers were informed that some of the sample had been drawn from program records; however, they did not know the program participation of a given household and they were assigned cases from more than one program.

After completion of the field work, a file was created which combined the survey and administra-

tive data for the AFDC sample cases. Confidentiality was preserved by deleting all identifiers from the data file after the survey and administrative records were matched.

Of the 260 families that were selected from the April 1980 payment files, 40 families (15.4 percent of the original sample) were not interviewed. The most common reason for not conducting the interview was an inability to locate the family, sometimes because the family had moved out of the State or county between April and July. In a few cases, the family was contacted, but refused the interview.

Four additional cases were deleted because the administrative data indicated that no AFDC payment was made during the April to June reference period. Therefore, 216 out of the original 260 cases in the AFDC sample were included in the analysis.

Characteristics of interviewed and noninterviewed cases were compared on the basis of their administrative records to assess the possibility of non-interview bias. The most salient characteristic was residence in California--35 of the 40 noninterviewed families lived in that state. The noninterviewed payees tended to be younger (28.8 vs. 32.1 years of age), and to have slightly fewer children (1.8 vs. 1.9). More important from an analytical standpoint were the tendency for noninterviewed families to receive higher monthly AFDC payments (\$381 versus \$282 in the month prior to interview) and to leave the AFDC rolls during the reference period (30 percent vs. 10 percent). While the higher payment levels by and large reflect California's higher payment standards, the average monthly AFDC payment of interviewed cases would have been about 6 percent higher had all cases been successfully interviewed. In terms of the impact of part-period participation, our analysis of interviewed families indicates that they are more likely to fail to report receipt of any cash assistance. Thus, if the noninterviewed cases had been successfully interviewed it is likely that the incidence of non-reporting would have been slightly higher (but only on the order of a half percent) than observed in the interviewed sample.

3. AFDC RECIPIENCY REPORTING

AFDC reciprocity reporting for the interviewed cases is summarized in table 1. The table shows that although 91 percent of the cases reported receiving cash assistance from the state or local welfare office, only 78 percent were able to identify the payment as AFDC *per se*. Thus, misclassification of AFDC as some other type of cash assistance was a more common source of reciprocity reporting error than outright non-reporting. Thirteen percent misclassified AFDC while only 9 percent did not report any type of cash assistance. As shown below, over 60 percent of those misclassifying their cash assistance reported the source of their payments as general assistance, a state supported assistance program.

The incidence of misclassification varied substantially by State, with Pennsylvania families at one extreme misclassifying nearly 39 percent of their cases and North Carolina and California families on the other, misclassifying 4 and 1 percent,

Type of misclassification	Number of cases	Percent distribution	Percent of all interviewed cases
Total.....	29	100.0	13.4
General assistance..	18	62.1	8.3
Foster child care..	1	3.4	0.5
Other cash welfare.....	8	27.6	3.7
Child support.....	2	6.9	0.9

respectively ($p < .001$).⁴ This suggests that there may be considerable variation among states in the extent to which recipients are made aware of the precise program under which they receive assistance. In Pennsylvania, for example, respondents sometimes simply reported receiving income from the "DPW" (the Department of Public Welfare) and were unable to specify the name of the program (AFDC) under which benefits were being received.

There is also some evidence that the incidence of non-reporting varied by State. At one extreme, nearly 14 percent of the California families did not report receipt of any type of cash assistance, whereas in Wisconsin all families reported some type of assistance. While this may reflect variation among states in attitudes toward cash assistance, given the relatively small number of study cases the probability is about .15 that such differences were due to sampling variation.

One of the purposes of this study was to identify the characteristics of recipients who misclassified their income or failed to report any cash assistance. Survey data was used to compare AFDC reporters with misclassifiers and assistance reporters with nonreporters.

Of the characteristics considered,⁵ only race ($p < .01$) and marital status ($p < .05$) seem to distinguish AFDC reporters and misclassifiers. Nineteen percent of the white payees reported receiving assistance other than AFDC while only 6 percent of black payees were misclassifiers. Married payees were about twice as likely (22 vs. 11 percent) as those of other marital statuses to misclassify their AFDC payment. We suspect that these differences merely reflect the contrasting composition of the state samples and that they are not substantively related to the misclassification problem.

Our review indicates that only four variables differentiate nonreporters from reporters: marital status, age, work status and part-period participation. Married payees were more than 4 times as likely to be nonreporters as payees who were divorced, widowed, separated or never married (22 vs. 5 percent $p = .002$). Nonreporters were also somewhat older than reporters--all nonreporters were at least 25 years of age while 23 percent of reporters were under age 25 ($p = .01$). More interestingly, the incidence of nonreporting was about three times higher for part-period payees than for full-period recipients (21 vs. 7 percent, $p = .02$) and was two times higher for workers than nonworkers (15 vs. 7 percent, $p = .04$).

The precise mechanisms by which these four variables are related to non-reporting are not clear. While marital status has the most impact, it is not obvious why it should be so important. Although it might be related to stigma, it could also be associated with situations in which the children, but not the mother, are AFDC recipients. Given the survey procedures, which emphasized income of the adult household members, a higher incidence of non-reporting might be expected. The importance of part-period participation is more readily understood since many of these individuals were no longer AFDC recipients at the time of interview and might have overlooked this source of past income. Employment, in turn, may have been associated with leaving the rolls and thus have generated a good deal of part-period participation. Although it is conceivable that employment also had an independent effect on non-reporting, we did not pursue this possibility. Finally, although it is possible that age had an independent effect, we suspect it may only reflect the higher incidence of marriage among the older payees.

In sum, misclassification appears to be largely a function of the payee's state of residence which probably reflects variations among states in the extent to which recipients are informed of the exact program designation under which payments are made. The circumstances surrounding non-reporting are less clear but the extent to which a family receives AFDC for only part of the survey reference period appears to be quite important. Both of these elements have been documented as affecting AFDC reciprocity reporting in earlier ISDP studies.⁶

4. AFDC PAYMENT REPORTING

Another purpose of this study was to assess the accuracy of AFDC payment reporting. One aspect of this issue is addressed in the text tab below which shows the percentage of families reporting a monthly assistance amount that agreed with the amount carried in their administrative record.⁷ In any given month of the reference period, between 62 and 67 percent of the families reported amounts that agreed with their administrative data. However, only 55 percent of the cases reported amounts that agreed in all three months.

Time period	AFDC reported as:		
	Total	AFDC	Other cash assistance ¹
All three months..... ^{2,3}	55.1 (185)	54.5 (156)	58.6 (29)
April.....	67.0	66.7	69.0
May.....	62.2	62.2	62.1
June.....	66.5	66.7	65.5

¹ Includes all misclassified cases regardless of reported source.

² Excludes seven AFDC cases for which the administrative amount was unknown and 5 AFDC cases for which the administrative amount was zero in April.

³ Base of percentage.

Table 1.--Characteristics of AFDC reciprocity reporting for all interviewed cases, by State.

State	Number of cases	Grand total	Percent distribution					
			Cash assistance reported as:					
			Total	AFDC <u>per se</u>	Some other form of assistance:			Cash assistance not reported
					Sub-total	General assistance	Other cash welfare ¹	
All four states..	216	100.0	91.2	77.8	13.4	8.3	5.1	8.8
California.....	79	100.0	86.1	84.8	1.3	1.3	-	13.9
North Carolina.....	54	100.0	94.5	90.7	3.8	1.9	1.9	5.5
Pennsylvania.....	57	100.0	91.2	52.6	38.6	24.6	14.0	8.8
Wisconsin	26	100.0	100.0	84.6	15.4	7.7	7.7	-

(-) None.

¹Includes foster child care payments and child support.

Although not shown in the table, the percentage of cases reporting amounts that were in agreement with the administrative data in all three months varied substantially by State, from 75 percent in North Carolina to 41-65 percent in the other three States. In reviewing possible reasons for these interstate variations, it was noted that the payment standard changed during the first half of 1980 in the three States and did not change in North Carolina. Despite this observation, the changes in payment standards did not appear to be directly reflected in payment amount errors. Over-reported amounts did not correspond to the new payment standards and underreported amounts did not correspond to the old payment standards.

When the accuracy of reported payments is differentiated by whether the payment was correctly reported as AFDC or misclassified as some other form of cash assistance, an interesting finding appears. Contrary to what might have been expected, the misclassifiers were no less accurate in reporting payment amounts than those who correctly identified themselves as AFDC recipients. In fact, the level of 3-month agreement was somewhat higher for the misclassifiers but the difference is not statistically significant ($p = .68$).

Considering that social security is generally believed to be the best reported government transfer payment in large-scale household surveys, it is quite noteworthy that available evidence indicates that the level of agreement between survey and administrative data on monthly social security payment amount is roughly comparable to that found here for respondents who correctly reported receipt of assistance in month prior to interview.⁸

Table 2, on the next page, shows the average survey and administrative record amounts for respondents who correctly reported assistance reciprocity in the month prior to interview by reporting category. The overall mean from both sources is quite close (\$276 in the survey and \$286 in the administrative records) with the survey mean understating the administrative mean by just 4 percent.⁹ In 21 percent of the cases, the survey amount was

less than the administrative amount, and for 9 percent of the cases the amounts reported in the survey exceeded the amounts carried in the administrative record. For cases underreporting their benefit amount, the average difference was \$79, or about 26 percent of the average appearing in the administrative record. The average survey/administrative discrepancy for cases overreporting their benefit amount was \$84, or about 37 percent of the average carried in the administrative record for these cases.

Frequently survey estimates of aggregate program income are compared to administrative aggregates for the program as a short-hand indication of the completeness of survey reporting. Such comparisons are of necessity somewhat crude since they fail to distinguish between outright non-reporting, misclassification and bias in the answers given by individuals who properly identify the given program as an income source. A more comprehensive comparison of survey and administrative aggregates is illustrated in the following tab. It shows that approximately 77 percent of the AFDC income received by the study sample went to individuals who correctly identified the source of their payments as AFDC. The income they reported amounted to 74 percent of the total, with the 3 percent discrepancy accounted for by their slight tendency to understate actual amounts received. An additional 13 percent of the aggregate was reported in the survey but was misclassified as some form of cash assistance other than AFDC. Thus while 87 percent of total AFDC income was reported by the program recipients a substantial portion was "hidden" by misclassification. Only 9 percent of the aggregate was missed by outright nonreporting.

To examine the factors associated with payment accuracy, the characteristics of cases in three categories were compared: agreement in all three months, disagreement in some of the months and disagreement in all three months.¹⁰ We began with the characteristics of the partial and total disagreement cases. Partial disagreement cases were much more likely to have received varying monthly

Table 2.--Number of cases and mean survey and administrative payment in the month prior to interview for those receiving and reporting cash assistance in that month by reporting category

Reporting category	Distribution of cases (in percent)	Mean monthly payment amount in dollars		Survey/administrative difference	
		Survey report	Administrative record	Dollar amount	As percent of mean administrative amount
Total..... (N) ¹	100.0 (176)	\$286	\$276	\$10	3.5
Survey and administrative amounts agree.....	69.9	289	289	0	N.A.
Survey amount less than administrative amount.....	21.0	221	300	79	26.3
Survey amount more than administrative amount.....	9.1	310	226	84	37.2

(N.A.) - Not applicable.

¹Excludes 7 cases with missing administrative data and 2 cases with missing survey data on monthly amounts.

amounts than total disagreement cases (88 vs. 45 percent, $p < .001$), to be part-period recipients (27 vs. 11 percent, $p < .05$), and to have markedly smaller families ($p < .01$). None of the other variables considered, including work status, proved to be statistically significant.

Having established that for the most part the partial and total disagreement cases had similar characteristics, except for the three variables mentioned, comparisons with complete agreement cases were made treating the partial and total disagreement cases as a group. Our review indicated that the two basic groups differed along several demographic dimensions. Those with partial or total disagreement were somewhat more likely to be white (64 vs. 49 percent, $p = .04$), widowed or divorced than separated or never married (57 vs. 33 percent, $p = .005$), and were less likely to live in public housing (11 vs. 24 percent, $p = .04$). The partial disagreement cases were also more likely to have fewer children (95 vs. 72 percent with two children or less, $p < .001$).

However, a cluster of three variables, work status, part-period reciprocity and payment variation is more interesting from the standpoint of understanding what may have caused inaccurate amounts reporting. Variation in payment appears to be the underlying factor in this triad of variables. Only 6 percent of complete agreement cases had varying amounts, while 88 percent of the partial disagreement cases and 45 percent of the complete disagreement cases received varying payments over the 3-month reference period ($p < .001$ for both comparisons). Employment would appear to be the second most important factor with about 40 percent of both disagreement groups, but only 19 percent of the complete agreement cases, holding jobs ($p = .001$). Part-period payment is also clearly important for the partial disagreement group (27 vs. 3 percent, $p < .001$). However, it is of considerably less importance for the total disagreement group (11 percent vs. 3 percent, $p = .116$) and is at best at the margin of statistical significance. In short, although other factors clearly are

operable (vis. only 45 percent of the total disagreement cases experienced payment variation), we strongly suspect that payment variability, generated by employment, part-period payment and other factors such as changing state payment standards, combined to produce inaccuracies in recall of assistance amounts.

Reciprocity reporting category	Aggregate benefits in thousands ¹	Percent distribution
Total.....	\$175.6	100.0
Subtotal reporting receipt of cash assistance.....	159.4	90.8
Amounts as reported.....	153.0	87.2
Amounts received but not reported.....	6.4	3.6
Reported AFDC.....	135.1	76.9
Amounts as reported.....	129.9	74.0
Amounts received but not reported....	5.2	2.9
Reported other cash assistance.....	24.3	13.8
Amounts as reported.....	23.1	13.1
Amounts received but not reported...	1.2	0.7
Nonreporters.....	16.2	9.2

¹Excludes instances where amounts are reported in the survey for a given month (aggregate reported benefits of \$4.2 thousand) but the administrative record indicates that no payment was received and cases with missing administrative or survey data on monthly amounts (N = 7 and 2 respectively).

Finally, the nature of the reporting errors were examined and are summarized in the following text tab. The most common errors for the cases in partial disagreement were reporting the most recent payment for all three months of the reference period when payments actually varied and lagging or leading the month of change in reciprocity. The most common error for cases in total disagreement was reporting a fraction or a multiple of the amount actually received. This may have resulted from a misunderstanding during the interview of the relationship between the monthly survey accounting period and the program payment cycle. Rounding errors accounted for about 14 percent of the cases in partial disagreement and 11 percent of those in total disagreement.

Nature of reporting error	Percent distribution by level of disagreement	
	Partial	Total
All four states..... (N)	100.0 (41)	100.0 (47)
Reporting the most recent payment for all three months.....	26.8	-
Lagging/leading the month of change in reciprocity.....	24.4	6.4
Reporting a fraction or multiple of the administrative record amount.....	17.1	46.8
Lagging/leading the month of change in payment or averaging payments over transition months.....	12.2	2.1
Rounding or reporting within \$10.....	12.2	10.6
Varying amounts correctly reported but amount value in disagreement, no reason discernable.....	7.3	8.6
Constant amounts correctly reported but amount value in disagreement, no reason discernable....	-	14.9
Constant amount reported when payments varied and amount value in disagreement, no reason discernable.....	-	10.6

5. CONCLUSION

A multi-state sample drawn from program records was used to investigate the accuracy of AFDC reciprocity and payment reporting. In terms of reciprocity reporting, misclassification was found to be a more common source of reporting error than outright nonreporting. The incidence of misclassification varied by state, most probably a function of state program operations. Nonreporting was higher

for married payees and those who received payments for only part of the reference period. The implications of these findings for questionnaire design and survey procedures are threefold: more explicit treatment of partial period payments, the use of the shortest survey reference periods as is feasible given cost constraints, and intensive interviewer training on the difficulties which some AFDC recipients have in reporting the source of their income as AFDC.

In terms of AFDC payment reporting, the ability to identify the source was not associated with greater accuracy in reporting amounts. Basically, accuracy seemed largely affected by whether or not payment amounts changed during the reference period. This finding suggests that improved measurement may be obtained by stressing the importance of accurate reporting of changes in payments to both respondents and interviewers.

Of even more importance for improved measurement is the need for a clearer understanding, during the interview, of the survey accounting period and its relationship to the program payment period. A frequent error stemmed from reporting a fraction or a multiple of an actual AFDC payment, in what appeared to be inappropriate transformations of a payment in an attempt to conform to the survey accounting period. This type of error could be substantially reduced if the interviewer was made aware of this problem.

Finally we would like to return to the importance of reference period length. Reference period length impacts on two important types of response errors--the tendency to overlook reciprocity after leaving the rolls and to err in reportable amounts. Use of a longitudinal panel design with relatively short reference periods, such as employed in the ISDP pilot surveys should confine the bulk of AFDC reciprocity reporting loss resulting from partial period payments to the initial interview. Shorter reference periods also place the interview closer to the point when amount changes occur and thus can be expected to reduce the tendency to overlook or misreport such changes.

Of course, our reasoning assumes that the nature of reporting errors in a national level survey would be roughly comparable to those uncovered for the four states in this study. Given that these states contributed 23 percent of the AFDC caseload in July 1980 and are representative of the major regions of the United States the assumption does not seem unreasonable.

6. ACKNOWLEDGEMENTS

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The cooperation of program personnel at the State level was also essential in obtaining the various program samples employed in the study. Lead

persons in the various States were Martha Mills, California; Raymond Riddle, North Carolina; Charles Passmore, Pennsylvania; and Angelica Bilkey, Wisconsin.

7. FOOTNOTES

- ¹The development program is a joint undertaking of the U.S. Department of Health and Human Services and the Bureau of the Census. A brief description of the ISDP program is given in M. Ycas and C. Lininger, "The Income Survey Development Program: A review", which appears in the 1980 Proceedings of the Section on Survey Research Methods of this Association, pp. 486-490.
- ²Aid to Families with Dependent Children (AFDC) provides cash payments to families with children deprived of support of a parent due to death, disability, absence from the home or, in some states, unemployment. The program is jointly funded by the Federal and State governments.
- ³For additional details see W.J. Logan, et al. "Report from the Special Frames Study," Social Security Administration, Office of Research and Statistics, forthcoming.
- ⁴In the course of our analysis we employed chi square tests to detect association between reporting errors and various characteristics of the payees. In cases where expected cell frequencies were less than five, corrections for continuity were employed. The statements of probability which are inserted parenthetically throughout the text represent the probability that the characteristic in question is distributed randomly with respect to the presence or absence of a given response error.
- ⁵Misclassifiers and nonreporters were compared to AFDC reporters on the basis of age, race, marital status, number of children, residence in public housing, work status, months receiving AFDC, and part-period receipt.
- ⁶An earlier ISDP study carried out in Texas also demonstrated the importance of reciprocity misclassification and the impact of part-period payments on nonreporting. In the Texas sample, both misclassification and nonreporting occurred, but nonreporting was somewhat more common than misclassification (see B. Klein and D. Vaughan, "Validity of AFDC reporting among list frame recipients" in J. Olson, ed., Reports from the Site Research Test, U.S. Department of Health and Human Services, Assistant Secretary for Planning and Evaluation, Washington, D.C., December 1980.)
- ⁷The survey amount was classified as in agreement if within \$5 of the amount carried in the administrative record.
- ⁸Data on monthly social security amounts was obtained in a special July 1973 supplement to the Census Bureau's Current Population Survey and was matched to social security program records as part of the 1973 Exact Match Project. The accuracy of monthly amount reporting was assessed by Vaughan (see "Measurement of OASDI Income in the Current Population Survey (CPS): Results, speculations, and prospects from experience with the 1973 Current Population Survey--administrative record exact match files", Social Security Administration, Office of Research and Statistics, October 1979, pp. 159-162). Of the group analyzed, only 54 percent of the monthly benefit

amounts reported in the survey fell within \$5 of the amount carried in social security program records. However, this relatively low rate of agreement was heavily influenced by the tendency for recipients over age 65 to report their monthly benefit net of Medicare premiums, which are deducted prior to payment to the recipient. In the absence of such errors, which have no direct counterpart in the AFDC program, the agreement rate using the \$5 criterion would probably be in the vicinity of 70-73 percent. Given a sample size of 176 for the AFDC/public assistance reporters for the month prior to interview (table 2), and 1,250 social security recipients in the CPS sample, it is not likely that the agreement rate for social security amounts is any higher than that for AFDC (the probability for no difference by source is between .56 and .14 over the 70 to 73 percent range). In any case, because of the ambiguity introduced by the presence of Medicare deduction errors, about the most that can be said is that we have no strong evidence that the social security monthly amounts reported in the CPS were substantially more accurate than the AFDC amounts reported in the Special Frames Study.

- ⁹When the survey reference period covers a substantially larger block of time, such as with the annual reference period employed in the March Supplement to the Current Population Survey, yet other factors may come into play. For example, to the extent that respondents create an annual estimate by multiplying the most recently received monthly payment amount by an estimate of the number of months that they received benefits during the year, the respondents' estimates of their annual flow may tend to overstate the actual amounts received when there is a secular increase in benefit levels as has been the case with AFDC in recent years. It is quite possible that such overstatements would compensate for the tendency to underreport the actual monthly amount figure used to construct the estimate of annual flow. Also, earlier research conducted as part of the ISDP provides documentation of the very strong impact that reference period length has on nonreporting. For example, the incidence of nonreporting in the first three months of a 6-month reference period nearly doubled when date of interview was moved from the month following the initial three month period to 4 months after the end of the initial three months (see table 111.1 in "Evaluation of experimental effects on data quality", which appears as chapter 6 in the source cited in note 6). For additional insight into the kinds of errors that enter into respondents' estimates of transfer income on an annual basis and in turn are reflected in survey estimates of program aggregates see D. Vaughan and R. Yuskavage, "Investigating discrepancies between Social Security Administration and Current Population Survey Benefit Data for 1972," Proceedings of the Social Statistics Section, part 2, American Statistical Association, Washington, D.C., 1976, pp. 824-829.
- ¹⁰Variation in monthly payment amounts was included along with the variables listed in note 5 in our review of variables associated with payment reporting errors.