Table of Contents

Current Perspectives on Food Stamp Program Participation

United States
Department of
Agriculture

Food and
Nutrition
Service

Office of
Analysis and
Evaluation

Food Stamp Program Participation Rates: August 1985

Table of Contents

Current Perspectives on Food Stamp Program Participation

Titles in this series:

Food Stamp Program Participation Rates
(November 1988) Pat Doyle and Harold Beebout

Food Stamp Program Participation Rates Among the Poverty Population, 1980–1987
(November 1988) Carole Trippe and Harold Beebout

Determinants of Participation in the Food Stamp Program: A Review of the Literature
(November 1989) Susan Allin and Harold Beebout

Estimating Rates of Participation in the Food Stamp Program: A Review of the Literature
(November 1989) Carole Trippe

Food Stamp Program Participation Rates: August 1985
(April 1990) Pat Doyle

Table of Contents

United States Department of Agriculture

Food and Nutrition Service

3101 Park Center Drive
Second Floor
Alexandria, VA 22302

Food Stamp Program Participation Rates: August 1985

Pat Doyle

A product of
Mathematica Policy Research, Inc.
600 Maryland Avenue, S.W.
Suite 550
Washington, DC 20024

April 1990

Table of Contents

ACKNOWLEDGMENTS

The authors would like to thank Steven Carlson, Robert Dalrymple, Alana Landey, Carole Trippe and Harold Beebout for their thoughtful comments as well as Ann Huff for preparation of the statistics for Food Stamp Program participation rates, Susan Allin for her technical review and editorial assistance and Carolyn Dunn, Sheana Thomas and Patrice Turner for preparation of the manuscript.

MPR Project Number: 7725-200
FNS Contract Number: 53-3198-7-31
FNS Project Officer: Alana Landey

This analysis was performed under a competitively awarded contract in the amount of $2,687,161.

CONTENTS

Table of Contents

Table of Contents

TABLES

FIGURES

Table of Contents

EXECUTIVE SUMMARY

Policymakers are interested in the extent to which the Food Stamp Program (FSP) is serving its target population, as well as which subgroups are more or less likely to participate in the program. This report is the second in a series of reports providing estimates of participation in the FSP using more accurate data on eligibles and participants than has previously been available.

The FSP participation rate is the ratio of the number of persons (or households) participating in the FSP (or the actual benefits paid to participants) to the number of persons (or households) who are eligible for the program (or the total benefits payable if all eligible households participated). The estimates presented in this paper indicate that, in the 50 states and the District of Columbia in August 1985, the following were true:

- 64 percent of the eligible individuals participated in the FSP;
- 59 percent of the eligible households participated in the program; and
- participating households received 75 percent of the benefits payable had all eligible households participated.

The higher rate for individuals than for households implies that larger households were more likely to participate than smaller ones. The finding that the benefit rate was higher than the household rate implies that households eligible for larger benefits were more likely to participate than households eligible for smaller benefits. These participation rates, while not strictly comparable to earlier findings due to methodological differences, are approximately the same as those reported for 1984 (Doyle and Beebout, 1988).

ESTIMATES OF PARTICIPATION BY SELECTED DEMOGRAPHIC CHARACTERISTICS

The estimates show considerable variation across selected demographic groups.

- Regardless of the participation measure used (individual, household, or benefit), preschool children and school-aged children participated at higher than average rates. For example, the individual rates were 75 percent for preschoolers and 73 percent for school children. The benefit rate for households with school children was 82 percent, compared to an overall benefit rate of 75 percent.
- Among the elderly, however, only 37 percent of eligible individuals participated, although the rate was higher among those living alone (41 percent), and was higher still among those receiving Supplemental Security Income (SSI) (67 percent).

- Among the disabled, close to 50 percent of the eligible individuals and eligible households participated, receiving 66 percent of the benefits payable if participation had been 100 percent.

- Among households headed by a single woman with children, approximately 75 percent participated.

- Households headed by black, nonhispanic individuals participated at a much higher rate (77 percent) than households headed by white, nonhispanic individuals (49 percent) or hispanic individuals (55 percent).

ESTIMATES OF PARTICIPATION BY SELECTED ECONOMIC CHARACTERISTICS

The estimates for eligible individuals and households with different economic characteristics show strong variation as well.

- Participation generally varied inversely with income. Individuals and households in poverty participated at considerably higher rates (79 percent and 75 percent, respectively) than individuals and households overall.

- Participation was greater among those eligible for larger benefits; the household rates ranged from 27 percent for monthly benefits under $10 to 87 percent for monthly benefits in excess of $150.

- Households with earnings had a lower-than-average participation rate (37 percent), whereas households receiving SSI, unemployment compensation, or public assistance participated at higher-than-average rates (66, 76 and 116[1] percent, respectively).

CHARACTERISTICS OF ELIGIBLE NONPARTICIPANTS

Approximately 4.8 million out of the 11.7 million households eligible for food stamps did not participate in the program. More than half of the eligible nonparticipants had incomes above the poverty line; one-third were eligible for a monthly benefit of $10 or less. The nonparticipants were equally divided among four groups: households with elderly persons, both above and below the poverty line, and households with workers, both above and below the poverty line. Elderly nonparticipating households tended to consist of a single individual while nonelderly nonparticipating households tended to consist of the working poor with children. About half of the households above poverty were eligible for small benefits ($10 or less) and, hence, their lack of participation is not surprising. However, households in poverty who did not participate tended to be eligible for large benefits (over half were eligible for $75 or more per month).

---

[1]A percentage greater than 100% is obtained due to measurement and sampling errors in the data.

Table of Contents

I. INTRODUCTION

The Food Stamp Program (FSP) provides low-income households with assistance in buying the food they need to maintain a nutritious diet. A food stamp household is generally defined as a person living alone, or a group of persons living together and sharing food purchases and meal preparation, whose monthly income and assets fall below specified limits. The assistance is in the form of coupons that can be redeemed for food purchases. The amount of the coupons is based on household size and income.

Not all households eligible for food stamps actually participate in the program. The literature on the program suggests a variety of reasons for nonparticipation.[1] Some people may be unaware of the program, while others may presume they are not eligible for benefits. Other people may be aware of the program and their own eligibility for it, but view the benefits as not worth the effort required to obtain and use them. Still others may not participate because of the stigma they associate with the use of food stamps.

Obviously, since some eligible households do not apply for benefits, the FSP is not serving the entire population targeted by the legislation that established the program. Indeed, according to prevailing conceptual models of the decision to participate in the program, participation should not be expected to be universal (see Allin and Beebout, 1989). But even if participation will never be universal, the Congress and other policymakers are interested in the proportion and characteristics of the eligible population that actually does participate in the program. They are also interested in which subgroups of the target population are more likely than others to participate in the program.

[1]See Allin and Beebout (1989) for a review of the literature.

This paper is the sixth in a series examining current issues on FSP participation, and the second which provides estimates of rates of participation in the FSP both among the total eligible population and among selected subgroups of that population that are of particular interest to policymakers.[2] Previous estimates of FSP participation have varied widely, because of differences in methodologies, differences in data sources, and inadequacies in the data sources.[3] The estimates reported in this series are more comprehensive and more accurate than most previous estimates. For this reason, and because these estimates are generally higher than most of the participation rates reported in previous research, this report should be of interest to policymakers who want to know how many and which program eligibles participate in the FSP.

Because substantial methodological improvements were made to the procedures used to estimate participation rates between the study of August 1984 participation rates (Doyle and Beebout, 1988) and the current study of August 1985 rates, the results of these papers are not directly comparable. These improvements are summarized in the Appendix.

The estimates in this series of reports are more accurate than most previous ones primarily because they are based on the Survey of Income and Program Participation (SIPP). Because eligibility for the FSP cannot be observed directly, the denominator of the participation rate (the total number of program eligibles or total potential benefits) has to be approximated using household survey data. In comparison to the household surveys used in previous research, such as the Current Population Survey (CPS), SIPP contains more, and more detailed, information on the household characteristics FSP administrators must consider

---

[2]The first report in the series which provides estimates of participation rates is Doyle and Beebout (1988).

[3]For a review of the literature on FSP participation rates and estimation techniques, see Trippe (1988).

when making actual eligibility determinations.[4] For example, SIPP contains information on monthly (as opposed to annual) income, monthly household composition, most of the expenses used in calculating deductions from income, and vehicular assets, thereby significantly advancing our ability to approximate eligibility status using survey data.

Data for the numerators of the overall participation rates calculated here were derived from the Food Stamp Program Statistical Summary of Operations (hereafter referred to as Program Operations data) and were adjusted to account for benefits issued in error in August 1985.[5] These administrative data are more accurate than the self-reported survey data employed in some previous studies of FSP participation since recent research has indicated that food stamp recipiency tends to be substantially underreported in household survey data (U.S. Department of Commerce, 1987). Because the numerators of the ratios reported here are based on administrative counts, they are more reliable estimates of the number of actual participants and the amount of benefits paid. The Program Operations data do not, however, contain data on subgroups of the participating population. Estimates for these groups were calculated using a sample of food stamp case records from the Integrated Quality Control System (IQCS) of the U.S. Department of Agriculture.[6]

Although our estimates represent an improvement over previous results, they are not without their own sampling and measurement limitations. In particular, the underreporting of public assistance income and recipiency common to all household surveys causes unrealistic

---

[4]The exception to this comparison is the 1979 Income Survey Development Program Research Test Panel (ISDP), the precursor to SIPP.

[5]The Food Stamp Program Statistical Summary of Operations is a monthly record of benefits issued and caseload serviced under the Food Stamp Program.

[6]The IQCS is a system of ongoing case record reviews designed to measure payment error rates in the Food Stamp, Aid to Families with Dependent Children (AFDC), and Medicaid programs. The IQCS is based on monthly probability samples drawn from all 50 states and the District of Columbia; this study uses active cases in the July/August 1985 samples.

estimates of food stamp participation rates among public assistance households. Furthermore, the survey does not provide all of the information needed to perfectly determine the food stamp-eligible unit in all households. In short, although this analysis represents a considerable improvement over most previous efforts, perfect statistics on the FSP-eligible population, or of subgroups participating in the program, are unattainable. Further research can reduce, but not eliminate, the uncertainties in estimation.

The remainder of this report is organized as follows. An overview of the methodology used is presented in Chapter II, while Chapter III reports the results for the overall participation rates, the rates disaggregated by selected demographic and economic characteristics, and the characteristics of those eligibles who did not participate. The report concludes with a technical appendix describing our procedures for estimating food stamp participation rates and differences in methodology between this report and the first report of this series on program participation (Doyle and Beebout, 1988); estimates of sampling error in the participation rate estimates; and the impact of asset measures on estimates of eligibles and participation rates.

II. METHODOLOGY AND DATA

This section describes the methodology employed in constructing the FSP participation rates presented in this report. Three rates of participation used in the literature are introduced and defined, followed by a discussion of how these rates are computed. The latter discussion includes a description of the criteria that FSP administrators use in making actual eligibility and benefit determinations and an explanation of how a model of those criteria was used to estimate the number of eligibles with SIPP data.

A. THREE ALTERNATIVE MEASURES OF FSP PARTICIPATION

No single measure of participation can adequately answer all the questions policymakers have about participation in the FSP. The three alternative measures discussed in the literature--the individual rate, the household rate, and the benefit rate--differ not only in their magnitude, but also in their advantages and limitations in answering a given question. It is therefore important to define each measure, specify its potential usefulness, and explain how it has been used in previous studies.

1. The Individual Participation Rate

The individual participation rate is a ratio of the number of persons participating in the FSP to the number of persons eligible for the program. Policy discussions about FSP participation rates have tended to focus on research results based on the individual rate, whereas discussions about participation behavior usually focus on a model of the household as the decision-making unit. In some instances, the individual rate may be preferable to the household rate, especially in answering questions about the participation of a particular subgroup of the target population. For example, the proportion of eligible elderly individuals

who participate in the FSP is a better indication of the behavior patterns of the elderly than is the proportion of all eligible households with an elderly member that participate.

2. The Household Participation Rate

The household participation rate is the ratio of the number of food stamp units, or households, participating in the program to the number of households eligible for the program. As just noted, analyses of participation behavior tend to rely on this rate because the household is seen as the decision-making unit. The definition of the household as the decision-making unit is derived in part from program rules that determine eligibility and benefits for households, not for individuals. The household rate can differ significantly from the individual rate because larger households are more likely to participate in the FSP than one-person households.

3. The Benefit Rate

The benefit rate is the ratio of the actual benefits paid to program participants to the total potential benefits payable if all program eligibles participated. Although it has not been used extensively in previous research, the benefit rate may be the best overall measure of how well the FSP is meeting the target population's need for assistance. The benefit rate estimates reported here are generally higher than the individual and household rate estimates, indicating that households with higher benefit levels, and, thus, greater need, are more likely to participate than households with lower benefit levels.

B. ESTIMATION OF PARTICIPATION RATES

Estimates of the numerators in the participation rate ratios reported here are based on administrative data derived from three sources as described in the Appendix. The first source is the Program Operations data providing the number of persons and households issued

benefits in August 1985 and the total dollar value of the coupons issued. These data were adjusted to eliminate ineligible participants and erroneous benefits as determined from the IQCS. Finally, the adjusted total number of participating households and persons and their benefits were distributed across various demographic and economic characteristics based on information from a sample of case records active in July and August 1985.[7]

Estimates of the denominators of the participation rate ratios were developed from SIPP using the procedures outlined in the Appendix. In essence, a model of the food stamp eligibility criteria formed the basis for determining which SIPP respondents belonged in the sample of program eligibles. This model used a simulation procedure whereby we quantified the program rules discussed below and applied them to each dwelling unit in the SIPP sample in August 1985. For units determined to be eligible as a result of this simulation, we estimated composition and potential benefits. Below we summarize the criteria program administrators employ in making actual determinations of eligibility and benefits.

Eligibility for the FSP is based on a series of rules defining the applicant's need, which is deemed a function of available cash income conditional on unit (household) size, as well as assets accessible to the unit.[8] The determination of need for each household applying for FSP benefits can be disaggregated into four distinct parts: (1) income limits, (2) asset limits, (3) nonfinancial standards, and (4) benefit levels. The parameters of each of these parts vary over time with cost-of-living adjustments and legislated changes in the program. This analysis

[7]This sample of cases was developed in the preparation of an annual report on the characteristics of food stamp households (U.S. Department of Agriculture, 1987).

[8]The discussion that follows is an overview of the regulations governing FSP eligibility and benefits. The complete regulations appear in the Code of Federal Regulations (7 CFR parts 270-273). A more in-depth summary of those regulations appears in Doyle and Beebout (1988).

employs the FSP criteria in existence in August 1985, the month corresponding to the administrative and SIPP data used.

The income test is comprised of two parts: a net and a gross income screen. Under the net income screen, monthly gross income net of allowable expenses must fall below the monthly federal poverty guidelines which vary by household size and geographic location.[9] Under the gross income screen, food stamp units that do not contain elderly or disabled members must also have gross incomes below 130 percent of the same poverty guidelines. In August 1985, gross income, as measured by the program, included all cash income received by members of the food stamp household, excluding the earnings of students under age 18, loans, nonrecurring lump-sum payments, and reimbursement of certain expenses. Net income was defined as gross income less a standard deduction, an earnings deduction, and deductions for expenses incurred for child care, medical, and shelter costs.[10]

There are also two different asset limits. In 1985, a food stamp household could have countable assets (or resources, as they are called in the administration of the program) of $1,500 or less and remain eligible for benefits. If an elderly person was present, and the household contained at least two members, the asset limit was $3,000. Selected pieces of property, such as the principal home, adjacent land, most household goods, and vehicles needed to produce income or to transport disabled individuals are not considered countable resources, but all other financial and nonfinancial assets are generally included. In most instances, assets are counted at their fair market value as long as they are accessible to at

---

[9]The income limits are based on the official monthly poverty guidelines, published by the U.S. Department of Health and Human Services (DHHS), which are adjusted each year to account for inflation. The income guidelines and other FSP parameters are generally the same for the 48 contiguous states and the District of Columbia and vary slightly for Alaska and Hawaii and the territories.

[10]The medical deduction is only allowed for medical expenses incurred by elderly or disabled members of the household.

least one member of the food stamp household. The principal exception to this is the treatment of vehicular assets.[11]

Nonfinancial eligibility standards include the definition of the program unit and characteristics of the unit (such as the presence of an elderly member) which affect eligibility. In general, food stamp benefits are issued to "households," but there are aspects of the program unit definition that distinguish the term from the Census designation, namely, a group of individuals who share living quarters.[12] The food stamp household consists of a person who lives alone, or persons who live together and share food purchases and meal preparation, with some exceptions for households containing elderly individuals unable to prepare their own meals. Restrictions are imposed on the formation of the food stamp household to prevent spouses, siblings, and parents with children under age 18 from forming separate units within a dwelling unit even if they purchase and prepare meals separately. Furthermore, selected individuals within a dwelling unit are excluded altogether from participation in the FSP. These include illegal aliens, persons refusing to comply with work registration requirements, strikers, and residents of most institutions. The FSP also contains several provisions designed to require able-bodied adults to work, seek training preparatory for work, or look for work. Individuals not exempt from these work registration requirements are prohibited from participating in the program if they refuse to comply.

---

[11]Vehicles needed for work-related travel, and one additional vehicle owned by members of the food stamp household, are valued at the current Blue Book value, and only the amount in excess of $4,500 is considered available resources. Any remaining vehicles owned by members of the household are subject to both a market value test and an equity test. The maximum of market value, less $4,500, and the equity is counted towards the household's assets.

[12]Groups of individuals who share living quarters are referred to as dwelling units or Census households. The latter term is significant in this analysis because the dwelling unit is commonly the interview unit used by the Census Bureau in collecting survey data on the U.S. population. Specifically, as noted in the Introduction, the dwelling unit is the interview unit for SIPP.

Households deemed eligible based on the criteria described above have their benefits computed as the difference between the maximum food stamp benefit for their household size and geographic location and 30 percent of their net monthly income.[13] In August 1985, the maximum food stamp benefit in the continental United States was $264 for a family of four. Households of size 1 or 2 whose benefit computation results in coupon values of less than $10 are issued a minimum benefit of $10.

[13]The maximum food stamp benefit in 1985 was equal to the Thrifty Food Plan for a family of 4 adjusted for the size of the unit using economies of scale specified through legislation.

III. RESULTS

Almost 7 million households in the 50 states and the District of Columbia participated in the Food Stamp Program in August 1985, as shown in Table 1. Based on the estimates prepared from SIPP data, 11.6 million households were eligible for the program in that same month. Thus, the overall household participation rate was 59 percent.

The overall individual rate was higher: 18.6 million individuals out of 29 million eligible individuals, or 64 percent, participated in the FSP. The average size of a participant's household was 2.7 persons, whereas the average size of an eligible household was 2.5 persons, indicating that larger households were more likely to participate than smaller households.

The estimates indicate that approximately $1.07 billion in coupons would have been issued to food stamp participants had the participation rate in August 1985 been 100 percent. Seventy-five percent of those benefits were issued. This percentage is consistent with the finding (shown later) that households entitled to higher benefits participated at higher rates than those entitled to lower benefits.

The fact that the benefit rate was higher than the individual rate, which in turn was higher than the household rate, implies that, in addition to other factors, both the size of the household and its potential benefit influence the decision to participate. The effects of household size and other demographic characteristics on the tendency to apply for benefits are outlined in section A; the effects of potential benefits and other economic characteristics are discussed in section B. Section C contains a discussion of the characteristics of eligible households who did not participate in the FSP in August 1985.

Table of Contents

TABLE 1

Individual, Household, and Benefit Participation Rates, August 1985

	Participants	Eligibles	Participation Rate
Individuals (1,000)	18,560	28,884	64.3%
Households (1,000)	6,894	11,604	59.4
Benefits (1,000)	$807,265	$1,072,262	75.3
Average Household Size	2.7	2.5	
Average Per Capita Benefit	$43.5	$37.1	

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

A. PARTICIPATION RATES BY SELECTED DEMOGRAPHIC CHARACTERISTICS

Table 2 presents household participation rates disaggregated by the size of the eligible unit. Most eligible households are relatively small, as are most participating households. Yet the participation rate tended to be higher for larger households, with single-person households participating at a substantially lower rate (50 percent) than all eligible households.

Individual participation rates disaggregated by selected demographic characteristics are presented in Table 3. The table shows that the FSP was serving a large majority of children in eligible households in August 1985. Three-fourths of eligible preschool children, that is, children under age 5, resided in households that participated in the program. Among school-age children this rate was 73 percent.

The participation rates for elderly and disabled individuals (37 and 47 percent respectively) were much lower than the overall rate for individuals and the rate for adults ages 18 to 59 (64 and 65 percent, respectively). However, the rates varied depending on the individual's living arrangements. Elderly individuals living alone were more likely to participate than elderly individuals living with others (41 percent versus 30 percent respectively). Similarly, 52 percent of eligible disabled individuals living alone received benefits under the program, whereas only 45 percent of those living with others participated. Given that participation rates are higher than average for households of size 2 or more, this pattern for elderly and disabled individuals is surprising, and suggests that household size may be less of a determining factor in their decisions to participate.

Table 4 presents household participation rates by selected characteristics. These rates also show that those who are elderly or disabled were less likely to be participating in the program. Only 37 percent of the eligible households containing an elderly member participated. Households with a disabled member, which are afforded most of the more

Table of Contents

TABLE 2

Household Participation Rates
by Household Size,
August 1985

Household Size (number of persons)	Number of Participating Households (1,000)	Number of Eligible Households (1,000)	Household Participation Rate
1	2,313	4,649	49.8%
2	1,471	2,380	61.8
3	1,208	1,718	70.3
4	900	1,369	65.8
5	502	817	61.5
6+	499	671	74.3

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

Table of Contents

TABLE 3

Individual Participation Rates
by Selected Demographic Characteristics,
August 1985

	Number of Participating Individuals (1,000)	Number of Eligible Individuals (1,000)	Individual Participation Rate
Living Alone			
Elderly	1,068	2,588	41.3%
Disabled	194	370	52.4
Living with Others			
Elderly	592	1,949	30.4
Disabled	307	686	44.8
Total Elderly	1,660	4,537	36.6
Total Disabled	501	1,056	47.4
Children under Age 18	9,181	12,490	73.5
Preschool	2,944	3,912	75.3
School-Age	6,238	8,579	72.7
Adults Ages 18 to 59	7,702	11,857	65.0

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

Table of Contents

TABLE 4

Household Participation Rates
by Selected Demographic Characteristics,
August 1985

Household Contained:	Number of Participating Households (1,000)	Number of Eligible Households (1,000)	Household Participation Rate
Elderly	1,475	3,957	37.3%
Disabled	476	1,019	46.7
Children under Age 18	4,079	5,517	73.9
Children Ages 5 to 17	3,193	4,275	74.7
Single Female Adult with Children	2,400	3,207	74.8
Single Male Adult with Children	96	209	45.9
Two or More Adults with Children[a]	1,583	2,101	75.3
White Nonhispanic Head	3,302	6,754	48.9
Black Nonhispanic Head	2,502	3,246	77.1
Hispanic Head	712	1,298	54.8

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

[a]Includes households in which the gender of the household head is unknown and female-headed households containing two or more adults.

generous eligibility standards given to households with an elderly member, participated at a somewhat higher rate (47 percent).

Among households with children, the participation rate was 74 percent, which is much higher than the overall household rate. The participation rate among single male-headed food stamp households with children (46 percent) was considerably less than the participation rate among single female-headed and two-parent households with children (75 percent). Note, however, the former rate is based on a relatively small sample. These rates differ drastically from the rates reported in Doyle and Beebout (1988). Those rates exceeded 100 percent for female-headed households with children. The difference reflects a change in the method of classifying eligible households along this dimension. Doyle and Beebout classified the food stamp-eligible household as female-headed with children if the Census dwelling unit in which the eligible food stamp household resided was a female-headed household with children. The rates in Table 4 reflect the classification of food stamp-eligible groups based on the presence of children in the eligible unit and the marital status of the designated head of the eligible unit.[14] Because of this difference, the 1985 results are more reasonable than the 1984 results, and, hence, there is some indication that the apparent shortage of low-income single parent households in SIPP and other household surveys (reported by Doyle and Trippe (1989) and Doyle and Beebout (1988)) may be attributed to a large extent to the inability to accurately measure the composition of program units within Census dwelling units with household survey data.

Food stamp participation rates varied considerably by race and ethnicity. More than three-fourths of the eligible households headed by a black, nonhispanic individual participated

[14]The designated head was chosen in a somewhat arbitrary fashion. In households that reported receiving food stamps, it is the person who reported the food stamp benefit first in the household. In other food stamp-eligible units, it is the first adult encountered.

in the FSP while only half of the eligible households headed by a white, nonhispanic individual participated in August 1985. Hispanic households participated at a rate of 55 percent.

In general, the benefit rates were higher than the corresponding individual and household rates. Table 5 presents the benefit rates disaggregated by selected demographic household characteristics. The benefit rate for households with an elderly member was 43 percent--6 percentage points higher than the corresponding individual rate. The pattern was more extreme for disabled individuals; the FSP was serving just over 45 percent of the eligible disabled individuals and households, while about 66 percent of the potential benefits for this group were being provided. This pattern implies that, within each of these groups, the needier households participated at a higher rate than less needy households.

Eighty-two percent of the benefits for which they were eligible were paid out to the households with children under age 18 that were eligible for assistance. Unlike the 1984 benefit rates which were highest for female-headed households, the 1985 rates were highest for two-parent households with children (94 percent) and lowest for single male-headed households with children (47 percent). Female-headed food stamp households received 76 percent of the benefits which would have been issued had participation among this group been 100 percent. The change in the participation patterns between 1984 and 1985 is an artifact of the change in procedures used to classify food stamp-eligible households along this dimension, as reported earlier.

Benefit levels seem to have more influence on the participation decision of two-parent households with children than single-parent households with children. About 94 percent of the benefits which could be issued to two-parent households with children were paid out in August 1985, whereas only 75 percent of the eligible households of this type participated. On

Table of Contents

TABLE 5

Benefit Rates
by Selected Demographic Characteristics of the Household,
August 1985

Household Contained:	Benefits Paid to Participating Households (1,000,000)	Potential Benefits for Eligible Households (1,000,000)	Benefit Rate
Elderly	$ 70.3	$164.8	42.7%
Disabled	42.1	64.1	65.7
Children under Age 18	651.0	791.3	82.3
Children Ages 5 to 17	537.8	637.6	84.3
Single Female Adult with Children	341.2	448.5	76.1
Single Male Adult with Children	11.9	25.2	47.4
Two or More Adults with Children[a]	297.8	317.7	93.7
White Nonhispanic Head	360.8	524.9	68.7
Black Nonhispanic Head	310.5	358.4	86.6
Hispanic Head	94.1	154.3	61.0

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

[a]Includes households in which the gender of the household head is unknown and female-headed households containing two or more adults.

the other hand, benefit rates were almost identical to household rates for single female-headed and male-headed households.

Benefit rates do not vary by race and ethnicity in the same manner as household rates. While the highest benefit rate was among black nonhispanic households (87 percent), the rate among white nonhispanic households (69 percent) exceeded the rate among hispanic households (61 percent). Thus, it appears that the level of benefits has a greater impact on the participation decision of white nonhispanic households than households of other race and ethnic origins.

B. PARTICIPATION RATES BY SELECTED ECONOMIC CHARACTERISTICS

Household participation rates disaggregated by levels of potential benefits are presented in Table 6. The estimates suggest that the decision to participate in the FSP is influenced by the level of benefits for which a household is eligible. In August 1985, the lowest participation rate (27 percent) was among households eligible for benefits no larger than the minimum benefit of $10. In general, the participation rate increased as the potential benefit rose, reaching a maximum of 88 percent for households whose potential benefit fell between $151 and $200. One exception to this pattern was a very slight, and probably insignificant, drop (from 88 to 87 percent) between the rates for households in the two highest benefit categories.

More than three-fourths (79 percent) of the individuals in poor households (i.e., their incomes fell below the poverty level) that were eligible for food stamps participated in the program (Table 7). Similarly, 75 percent of households in poverty participated, receiving 81 percent of the benefits which would have been issued had all poor households participated (Tables 8 and 9). All three rates were at least 90 percent for households with incomes below half the poverty level, and declined rapidly as income increased. The participation rates were

Table of Contents

TABLE 6

Household Participation Rates
by the Level of Monthly Benefits,
August 1985

Monthly Benefit Level	Number of Participating Households (1,000)	Number of Eligible Households (1,000)	Household Participation Rate
≤ $10	600	2,201	27.3%
11-25	350	799	43.9
26-50	625	1,386	45.1
51-75	749	1,236	60.6
76-100	1,323	1,958	67.6
101-150	1,302	1,791	72.7
151-200	789	900	87.7
201+	1,155	1,334	86.6

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

Table of Contents

TABLE 7

Individual Participation Rates
by the Ratio of Gross Income of the
Individual's Food Stamp Unit to the Monthly Federal Poverty Level,
August 1985

Income as a Percentage of Poverty	Number of Participating Individuals (1,000)	Number of Eligible Individuals (1,000)	Individual Participation Rate
Total ≤ 100	17,365	22,067	78.7%
0	961	1,379	69.7
1-50	6,997	7,608	92.0
51-100	9,407	13,080	71.9
Total > 100	1,195	6,816	17.5
101-130	1,145	6,411	17.9
≥ 131	50	405	12.3

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

Table of Contents

TABLE 8

Household Participation Rates
by the Ratio of Gross Income of the
Food Stamp Unit to the Monthly Federal Poverty Level,
August 1985

Income as a Percentage of Poverty	Number of Participating Households (1,000)	Number of Eligible Households (1,000)	Household Participation Rate
Total ≤ 100	6,457	8,655	74.6%
0	472	684	69.0
1-50	2,295	2,477	92.7
51-100	3,690	5,495	67.2
Total > 100	437	2,948	14.8
101-130	408	2,681	15.2
≥ 131	29	267	10.9

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

Table of Contents

TABLE 9

Benefit Rates
by the Ratio of Gross Income of the
Food Stamp Unit to the Monthly Federal Poverty Level,
August 1985

Income as a Percentage of Poverty	Benefits Paid to Participating Households (1,000,000)	Potential Benefits for Eligible Households (1,000,000)	Benefit Rate
Total ≤ 100	$792.5	$978.5	81.0%
0	68.1	96.9	70.3
1-50	404.2	447.8	90.3
51-100	320.2	433.8	73.8
Total > 100	15.3	93.7	16.3
101-130	15.0	88.5	16.9
≥ 131	0.3	5.2	6.4

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

under 20 percent for all higher-income classes, reaching a low of 6 percent for benefits to households with incomes above 130 percent of poverty. Households and persons in this higher-income class were eligible for only small amounts of assistance; thus, their low participation is not surprising.

The estimates of the three participation rates for units with incomes above 130 percent of poverty showed an unexpected pattern. The individual participation rate for that income class was 12 percent; the corresponding household rate was 11 percent; and the corresponding benefit rate was 6 percent. Food stamp eligibility criteria restrict this group to households containing an elderly or disabled individual (these households are the only ones exempt from the gross income test). These differences in the rates imply that participating households in this income class received lower benefits than the potential benefits of nonparticipating eligible households in the same class. This implication is contrary to the notion that participation rates increase as potential benefits increase. On the other hand, the sample size for this group is somewhat small, implying that the estimates have low statistical reliability.

Individuals in eligible households with no cash income had a participation rate of 78 percent. Similarly, households with no income participated at a rate of 69 percent, while the benefit rate for this group was 70 percent. Because no household can exist on zero income, and studies based on other surveys have shown measurement problems to be prevalent in the zero-income group, the eligible units with zero income presumably include households for which some form of reporting or measurement error has occurred.[15]

Estimation of participation patterns by the receipt of selected sources of income concludes the analysis of participation rates in the FSP. Household participation rates among those with earnings, SSI, public assistance, and unemployment compensation are presented in

[15]As discussed in Doyle and Beebout (1988), selected studies have shown that households classified as zero income often represent measurement or classification problems rather than households with no source of economic support, and that is why they do not seem to behave in the expected manner.

Table 10. The estimated participation rate for households with earnings was much lower than the overall rate (37 percent versus 59 percent). Recipients of unemployment compensation, on the other hand, participated at a higher rate (76 percent) than that of the total eligible population. The rate for earners remained relatively constant between August 1984 and August 1985, while the rate for those receiving unemployment compensation rose. However, the sample size for eligible households with unemployment compensation was small, and, therefore, these estimates, and the difference in these estimates, are of low statistical reliability.

The household participation rate for food stamp households that received SSI payments--66 percent--exceeded the overall participation rate by about 11 percent. Households in both the numerator and the denominator of this participation rate exclude persons receiving SSI in cashout states, where cash is issued through the SSI program in lieu of food stamps.

Households that contained an elderly member and that also received SSI participated at a much higher rate--67 percent--than did all households that contained an elderly member (37 percent, from Table 4). The rate of SSI participation by elderly individuals eligible for that program has been estimated to be 52 to 61 percent (Shiels, Barnow, Chaurette and Constantine, 1990), which is considerably higher than the corresponding rate for elderly individuals eligible for food stamps (37 percent, from Table 3). Given the higher FSP participation rate for elderly participants who received SSI than the elderly in general, it is likely that the low overall rate of food stamp participation among the elderly was due to the low participation rate of those who were not poor enough to qualify for SSI. Such individuals are entitled to small food stamp benefits as well.

The estimates for households receiving public assistance, and especially those receiving AFDC, exceeded 100 percent. These unrealistic rates are primarily due to the underreporting

Table of Contents

TABLE 10

Household Participation Rates
by Selected Sources of Income,
August 1985

Source of Income	Number of Participating Households (1,000)	Number of Eligible Households (1,000)	Household Participation Rate
Earned Income	1,352	3,674	36.8%
SSI	1,303	1,983	65.7
Elderly in the unit	863	1,296	66.6
No Elderly in the unit	440	687	64.1
Public Assistance	3,381	2,927	115.5
AFDC	2,664	2,249	118.5
Other welfare	761	781	97.4
Unemployment Compensation	183	242	75.6

Sources: Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

of AFDC receipt in SIPP (the number of receipients of AFDC benefits in SIPP was only 82 percent of an independent estimate derived from administrative data) discussed in the Appendix.

C. CHARACTERISTICS OF ELIGIBLE NONPARTICIPANTS

The preceding sections focused on those households that participate in the Food Stamp Program. In this section, the focus is on those households that were eligible for the FSP but did not participate.

About 4.7 million of the 11.6 million households eligible for the FSP did not participate in August 1985 (see Table 11). These households tended to have relatively high incomes and were entitled to relatively small benefits. Among all eligible nonparticipants,

- more than half had incomes above the poverty level, and
- a third were eligible for a monthly benefit of $10 or less; more than 40 percent were eligible for a monthly benefit of $25 or less.

As shown earlier in this report and in other research (Doyle and Beebout, 1988 and Allin and Beebout, 1989), those who are eligible for lower benefits tend to participate in the FSP at lower-than-average rates, so these results are not surprising. These characteristics of nonparticipating eligibles also serve as further evidence that the program is well-targeted to those with comparatively greater need.

On the other hand, about half of nonparticipating eligibles had incomes below the poverty line, and half of those were eligible to receive over $75 a month in food stamps.

Table of Contents

TABLE 11

Characteristics of Eligible Nonparticipants
Above and Below Poverty
August 1985

	Percent Distribution of Eligible Nonparticipating Households[a]		
	Below Poverty	Above Poverty	Total
Benefit Level			
<=$10	9.9	24.1	34.0
11-25	3.2	6.3	9.5
26-75	8.8	17.8	26.5
76+	24.8	5.2	30.0
TOTAL	46.7	53.3	100.0
Composition			
Elderly Present	26.5	26.2	52.7
Living alone	14.8	17.6	32.3
Living with others	11.7	8.5	20.3
Nonelderly Households			
With Earnings	21.2	22.8	44.0
With children	14.2	17.0	31.2
Without children	7.0	5.8	12.8
Total	46.7	53.3	100.00
Population counts			
Persons (thousands)	4,702	5,621	10,323
Households (thousands)	2,198	2,511	4,711
Benefits (millions)	$186.5	$78.4	$264.9

SOURCE: Eligible nonparticipants are computed as the difference between eligibles and participants. Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

[a]Percents may not sum to 100 due to rounding error.

Overall, about 30 percent of all nonparticipants were eligible for monthly benefits greater than $75. The reasons for this group's nonparticipation are less clear.[16]

Eligible nonparticipants were relatively evenly split between households containing elderly persons and those with earnings, and households above and below the poverty line. Table 12 illustrates that they were heavily concentrated in two poverty classes: 51 to 100 percent of poverty (38 percent) and 100 to 130 percent of poverty (48 percent). Most nonparticipating households had either an elderly member--two-thirds of whom lived alone--or a working member--most of whom had children. These characteristics are consistent with earlier findings on participation rates that show below-average participation among the elderly and the working poor.

Overall, half the eligible nonparticipating households consisted of a single adult, just under one-third contained children, and three-fourths were headed by a white nonhispanic individual. Most eligible nonparticipating households with children (17 out of 31 percent) were headed by a single female, although a sizable portion (11 out of 31 percent) consisted of two-parent households. Only 5 percent of the eligible nonparticipating households were reported to have no income, and hence may have been subject to some form of measurement

error, as noted in Section B. Very few received unemployment compensation (relatively few eligible households have this income source), while 14 percent received SSI.

TABLE 12

Demographic and Economic Characteristics
of Eligible Nonparticipant Households
August 1985

	Population Counts	Distribution of Households
Household size[a]		
1	2,336	49.6%
2	909	19.3
3	510	10.8
4	469	10.0
5	315	6.7
6+	172	3.7
Households containing:[b]		
Elderly	2,482	52.7
Elderly living alone	1,520	32.3
Disabled	543	11.5
Disabled living alone	176	3.7
Children under age 18	1,438	30.5
Children under age 5	633	13.4
Children ages 5 to 17	1,082	23.0
Single-female with children	807	17.1
Single male with children	113	2.4
Two or more adults with children	518	11.0
White nonhispanic head	3,452	73.2
Black nonhispanic head	744	15.8
Hispanic head	586	12.4
Income as percent of poverty[a]		
0	212	4.5
1-50	182	3.9
51-100	1,805	38.3
101-130	2,273	48.3
131+	238	5.1
Household income includes:[b]		
Earnings	2,322	49.3
SSI	680	14.4
Unemployment compensation	59	1.3
Total Households	4,711	100.0

SOURCE: Eligible nonparticipants are computed as the difference between eligibles and participants. Counts for participants are from the Food Stamp Program Statistical Summary of Operations adjusted for errors in issuances of benefits. Estimates for eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

[a]Percents may not sum to totals due to rounding error.

[b]Percents do not sum to 100 because households may have more than one of the characteristics listed.

Table of Contents

REFERENCES

Allin, Susan, and Harold Beebout. "Determinants of Participation in the Food Stamp Program: A Review of the Literature." Current Perspectives on Food Stamp Program Participation. Alexandria, VA: Food and Nutrition Service, U. S. Department of Agriculture, 1989.

Doyle, Pat and Harold Beebout. "Food Stamp Program Participation Rates." Current Perspectives on Food Stamp Program Participation. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, 1988.

Doyle, Pat, and Robert Dalrymple. "The Impact of Imputation Procedures on Distributional Characteristics of the Low Income Population." In Proceedings of the Bureau of the Census Annual Research Conference III. Washington, D.C.: Bureau of the Census, U.S. Department of Commerce, 1987.

Doyle, Pat, and Charles Post. "Development of Uniform Eligibility Measures for SIPP-Based Cross-Section Files." Report to Food and Nutrition Service, U.S. Department of Agriculture. Washington, D.C.: Mathematica Policy Research, Inc., 1988.

Doyle, Pat, and Carole Trippe. "Validation of the Food Stamp Microsimulation Model." Report prepared for the Food and Nutrition Service, USDA. Washington, D.C.: Mathematica Policy Research, Inc., 1989.

Landa, Cady. Implications of Food Stamp Program Unit Rules: Evidence from SIPP. Final report to Food and Nutrition Service, U.S. Department of Agriculture. Washington, D.C.: Mathematica Policy Research, Inc., 1987.

Mathematica Policy Research, Inc. Survey of Income and Program Participation 1984 Panel Wave 7 and 1985 Panel Wave 3 August Eligibility File Technical Specification. Report to the Food and Nutrition Service, U.S. Department of Agriculture. Washington, D.C.: Mathematica Policy Research, Inc., 1990.

Short, Kathleen and Edith M^{c}Arthur. "Life Events and Sample Attrition in the Survey of Income and Program Participation." Proceedings of the American Statistical Association. Alexandria, VA: American Statistical Association, 1985.

Shiels, John F., Burt S. Barnow, Katherine A. Chanrette and Jill M. Constantine. "Elderly Persons Eligible For and Participating in the Supplemental Security Income (SSI) Program." Vienna, VA: Lewin/ICF, 1990.

Trippe, Carole. "Estimating Rates of Participation in the Food Stamp Program: A Review of the Literature." Current Perspectives on Food Stamp Program Participation. Alexandria, VA: Food and Nutrition Service, U. S. Department of Agriculture, 1989.

U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis and Evaluation. Characteristics of Food Stamp Households: August 1985. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, 1987.

U.S. Department of Commerce, Bureau of the Census. "Money Income and Poverty Status in the United States: 1988 (Advanced data from the March 1989 Current Population Survey)" Current Population Reports, Series P-60, No. 166. Washington, D.C.: U.S. Government Printing Office, 1989.

U.S. Department of Commerce, Bureau of the Census. "Survey of Income and Program Participation Users' Guide." Washington, D.C.: U. S. Bureau of the Census, U.S. Department of Commerce, 1987.

U.S. Department of Commerce, Bureau of the Census. "Economic Characteristics of Households in the United States: Third Quarter 1984." Current Population Reports, series P-70, no. 5. Washington, D.C.: U.S. Government Printing Office, 1985.

Table of Contents

APPENDIX

TECHNICAL PROCEDURES USED TO COMPUTE PARTICIPATION RATES

Table of Contents

As noted in the text, the participation rates developed for this study were derived from a comparison of administrative data on program participation to survey data on program eligibles. This appendix provides detailed information on how the numerators and the denominators were constructed.

A. USING ADMINISTRATIVE DATA TO ESTIMATE THE NUMBER OF PARTICIPANTS

One source of the disparities in the previous estimates of FSP participation rates, as noted earlier, has been the use of household survey respondents' reports of their own participation--data known to be substantially underreported. For example, the U.S. Department of Commerce (1989) estimated that only 76 percent of the households receiving food stamps in 1988 reported that receipt in the March 1989 CPS.

The estimates of the numerator in the rates reported here are based on administrative data derived from three sources. The first source is the Program Operations data which contain information on the number of persons and households issued benefits and the total dollar value of the coupons issued for August 1985. The Program Operations statistics are presented by state, allowing us to adjust the totals to estimate the caseload residing in the 50 states and the District of Columbia, the population reflected in SIPP.

The second data source is the Integrated Quality Control System (IQCS). This was used to adjust the Program Operations statistics to eliminate ineligible participants and erroneous benefits which cannot be captured in the estimation of eligibility using SIPP. The number of participating households in FY 1985 Program Operations data was adjusted downward by 3.67 percent to eliminate ineligible households that were not included in the SIPP-based denominators of the participation rates. Similarly, total benefits reported in the

Program Operations data were reduced by the proportion of benefits issued in error to these ineligible households (6.02 percent).[17]

The third data source is a sample of food stamp case records from July and August 1985 IQCS samples. This sample of case records was used to calculate the distribution of persons, households, and benefits across various demographic and economic characteristics.

B. USING SIPP TO ESTIMATE THE NUMBER OF ELIGIBLES

Our estimation of the FSP-eligible population in August 1985 involved several stages. First, using SIPP data, we developed an analysis file reflecting the U.S. population as of August 1985. We then used this file to simulate program eligibility, a process whereby we quantified the program rules defined in the Chapter II and applied them to each dwelling unit in the data base. For each dwelling unit we also estimated its composition, eligibility status, and potential benefits. Section 1 summarizes our development of the analysis file, and section 2 assesses the outcome of the eligibility simulation.

1. Development of the Analysis File

SIPP is a nationally representative longitudinal survey of adults in the United States that provides detailed monthly information on income, program participation, and wealth. It is a multipanel longitudinal survey to which replacement panels are added each year. At the time of this study, only data from the first two (1984 and 1985) panels were available. Each panel contains information on persons in a longitudinal sample followed for a period of over two and one-half years. The longitudinal sample is composed of adults, ages 15 or older, residing in a cross-sectional sample of dwelling units in the United States. These adults, along

[17]Total benefits could have been further adjusted to account for benefits issued incorrectly to eligible households (both over- and underpayments). However, this adjustment would have had no practical effect because the overpayment and underpayment rates virtually offset each other. Because the difference is trivial, and a strong conceptual basis for making the additional adjustment was lacking, we elected to adjust only for benefits paid to ineligible households.

with other individuals with whom they resided, were interviewed every four months. In each round of interviewing (or wave), a core questionnaire collected information on each of the four months preceding the interview date. In most waves, the monthly core questions were supplemented with questions on a variety of topical issues that varied from wave to wave. Because the interviewing process was staggered, the reference period covered in any given wave was not the same for all sample members.[18]

Although the survey is longitudinal, it is designed to support cross-sectional estimation for Census households residing in the 50 states and the District of Columbia. For this analysis, cross-sectional estimates of food stamp-eligible households were derived from Wave 7 of the 1984 panel and Wave 3 of the 1985 panel, each of which was combined with information collected in other selected waves of the respective panels. Although Wave 7 of the 1984 panel and Wave 3 of the 1985 panel were independent samples of the U.S. population, they were administered simultaneously. Furthermore, a straightforward adjustment to the sample weights allowed estimates to be based on combined panels.

These two waves were chosen for the following reasons: (1) they sampled the population in the month of August, making the reference period comparable to the administrative data used for the numerator; (2) they contain topical information on assets; and (3) together, they provide a relatively large sample size (27,660 households). The integration of data from the other waves within each panel was necessary because Waves 7 and 3 do not contain selected information needed to estimate food stamp eligibility. Although they do contain measures of monthly income, monthly Census household composition, and assets, they do not contain measures of medical, child care and shelter expenses, and the information

[18]For further information on the design and scope of SIPP, see U.S. Department of Commerce (1987).

needed to determine disability status is incomplete. The omissions were corrected in the following way:

- Out-of-pocket medical expenses were imputed based on data from the Consumer Expenditure Survey.
- Child care expenses were linked to Wave 7 of the 1984 Panel from Wave 5 and to Wave 3 of the 1985 Panel from Wave 4 using procedures designed to compensate for changes in circumstances that might have occurred within each panel.
- Shelter expenses were linked to Wave 7 of the 1984 Panel from Wave 4 of that panel accounting for changes in circumstances over time. Due to their omission in the 1985 panel, shelter expenses were imputed to Wave 3 of the 1985 panel based on data from Wave 4 of the 1984 panel.
- Disability status was linked from Wave 1 of the respective panels.

Mathematica Policy Research, Inc. (1990) describes in more detail the development of the analysis file used in the simulation of the FSP.

2. An Assessment of the Eligibility Simulation

In brief, the procedure used to estimate the eligible population was designed to replicate, as closely as possible given the data limitations outlined below, the eligibility determination process for each individual or household on the SIPP analysis file. In other words, the program eligibility and benefit criteria outlined above were applied to each household as if it had actually applied for food stamps.

Although SIPP contains more information on the variables involved in determining FSP eligibility and benefits than does any other household survey available, problems still remain. The simulation procedures described above cannot perfectly replicate the eligibility and benefit determination process mandated in the legislation, despite the adjustments and enhancements made to the SIPP data. Specific discrepancies are summarized below.

- Unit definition: Because SIPP does not measure the complete set of characteristics used in determining a food stamp unit, especially information on which dwelling unit members customarily purchase and prepare food together, the simulated food stamp household is not the same as the unit determined by the food stamp case worker. For this study, the reported program unit composition in Census households with reported benefits was used to simulate the food stamp household. In other dwelling units with cash assistance, the food stamp household was equal to the cash assistance unit, plus any spouses or related children under age 18 in the dwelling. In all other dwelling units, the simulated food stamp household was the same as the Census household. Issues affecting the construction of food stamp households in SIPP are described in Landa (1987) and Doyle and Dalrymple (1987).

- Countable assets: The financial, nonfinancial, and vehicular assets reported in SIPP were used to estimate countable assets, according to program rules. SIPP does not explicitly measure, however, all of the information needed for this purpose, such as cash on hand. Furthermore, persons not present at the time of the interview are assumed to have no vehicular assets.

- Gross income: The measure of gross income employed for this study is close to, but not precisely the same as, gross income reported to the food stamp case worker. First, survey data on income and program participation, such as the data collected in SIPP, tend to be underreported. For example, the number of recipients of AFDC benefits in SIPP was only 82 percent of an independent estimate derived from administrative data; the number of recipients of unemployment compensation was 79 percent of the benchmark; and the number of recipients of veterans' benefits was 90 percent of the benchmark (U.S. Department of Commerce, 1985). Second, the definition of income for purposes of food stamp eligibility is not precisely the same as income measured in SIPP. For example, the Food Stamp Program counts net self-employment earnings averaged over a period of up to one year, whereas SIPP measures self-employment draw. Third, as noted above, unit composition, as simulated with SIPP data, differs from the case worker's determination of the food stamp household, and, hence, aggregated income for the food stamp household may differ as well.

- Net income: The use of approximated medical expenses for elderly and disabled individuals, the use of approximated shelter expenses for individuals in the 1985 panel, and measurement error in the collection of shelter and child care expenses in SIPP will cause some distortion of simulated net income. The SIPP definitions of shelter and dependent care expenses also differ slightly from the FSP definitions. For example, expenses incurred for the care of incapacitated adults are not included in the dependent care expenses in SIPP, and small amounts of shelter costs, such as water bills, are omitted.

- Disability status: The determination of disability status relied on reported disability and reported income receipts, as specified under the program. Reporting and measurement errors in SIPP may result in some distortion of the number of disabled individuals identified in this manner.

- Measurement error: Several forms of nonsampling errors affect the eligibility simulation, including the underreporting of income and program participation noted above; and the misclassification of benefit and income types.

The possible bias resulting from each of these measurement and reporting errors is shown in Figure A-1. The net result on estimates of the number of eligibles is uncertain. Underreporting of gross income will bias the estimates of eligible households upward, since more households will appear to have met the income limits than actually did. On the other hand, the omission of some types of expenses may bias the measurement of net income upward, thus decreasing the estimate of the number of eligible households. However, the inability to perfectly replicate program regulations in the calculation of deductions from expenses may result in the reverse effect. Furthermore, selected assets are omitted from our analysis file (for example, persons not present at the time of the interview have zero imputed vehicular assets), thus overestimating the size of the eligible population.

Finally, the underrepresentation of some groups of individuals biases the estimates of eligibles downward. As illustrated above, the SIPP data seem to underrepresent significantly households receiving public assistance. These households form a large portion of the eligible and participating populations. As a result, some of the participation rate estimates for these households exceed 100 percent.

C. IMPACT OF MEASUREMENT AND REPORTING ERRORS

While we cannot directly assess the full impact of the measurement and reporting errors, discussed in the previous section, some indications of the magnitude of the problems can be summarized by comparing the methodology of the study by Doyle and Beebout (1988),

Table of Contents

FIGURE A-1

Factors Affecting The Simulation Of Food Stamp Eligibility With SIPP And The Direction Of The Bias

Source of Error	Effect on Estimates of the Number of Eligibles
Unit Definition	Underestimate
Countable Assets	Overestimate
Gross Income	
Underreporting	Overestimate
Definition	Underestimate
Program participation underreporting and misreporting	Underestimate of eligibles participating in other programs
Net Income	Unknown
Disability Status	Underestimate
Measurement Error	Unknown

which produced estimates of participation rates in August 1984, and that of this study. There are three areas which can be examined explicitly: (1) the impact of correcting the administrative data for benefits issued in error, (2) the impact of sampling and nonsampling errors on the determination of FSP participation rates, and (3) the impact of the methods for measuring financial asset balances. Each is discussed in detail below and summarized here.

- The adjustment of administrative data on program caseload by 3.67% and costs by 6.02% reduces individual and household participation rates by 2 percentage points and reduces benefit rates by 4 percentage points.
- There appears to be a bias in the SIPP data associated with the number of times respondents have been contacted. Participation rates estimated solely in Wave 7 of the 1984 Panel are consistently higher than rates estimated solely on Wave 3 of the 1985 Panel. The combined panel estimation used in this report reduces this bias.
- The change in procedures used to measure financial asset balances between the August 1984 study and the current study increased the household participation rate. Both the 1984 and 1985 methodologies were applied to Wave 7 and the household participation rate was 2 percentage points higher using the 1985 methodology. The impact was strongest among households with no income, for whom the rate was 7 percentage points higher using the later methodology.

These methodological and sampling issues prohibit direct comparison between the August 1985 participation rates reported in Chapter III and the rates reported for August 1984 in Doyle and Beebout (1988). However, some patterns can be discerned, and are highlighted in the report where appropriate.

1. Comparison Of Participation Rates Before And After Adjustment Of Program Operations Data For Errors In Issuance

Participation rate estimates presented in the body of this report reflect total caseload and benefits derived from Program Operations data for August 1985, adjusted for errors in issuance. The number of participating households and persons was reduced by 3.67 percent to account for ineligible households to whom benefits had been issued in error. Total benefits

were reduced by 6.02 percent to account for benefits issued to those households. Tables A-1 through A-3 list the rates which would have been computed had the adjustment to the numerators not been made. These are compared to the actual rates incorporated into the body of the text.

2. Impact Of Sampling And Nonsampling Errors On Estimates Of The Number Of Food Stamp Eligibles

Eligible households, persons, and benefits were estimated using microsimulation techniques on a sample of the U.S. population. Therefore, they are subject to both sampling and nonsampling errors. Sampling errors of the simulation estimates are difficult to estimate due to the existence of several stochastic procedures imbedded within the model. For example, medical expenses are imputed to the observations using a predictive model with a random error term drawn from a normal distribution. Measures of nonsampling errors are equally difficult to quantify. However, we can provide an indication of the range in estimates attributed to sampling and selected forms of nonsampling error because the underlying analysis file was developed through the combination of two independent samples of the population: Wave 7 of the 1984 Panel and Wave 3 of the 1985 Panel.

In this section we provide estimates of eligibles and participation rates based on three samples--Wave 7 alone, Wave 3 alone, and the two waves combined. Each set of estimates was developed in exactly the same manner, the only difference being the underlying data. Estimates of the numerator of the participation rates are the same as the numerators used in the body of this report. Estimates of eligibles from the three samples were simulated using the same model. Table A4 compares the three outcomes.

Overall, the participation rates vary by 1 to 5 percentage points. The household rate shows the least amount of variation, ranging from 58 percent based on Wave 3 alone to 59 percent for Wave 7 and for Waves 3 and 7 combined. The most variation occurs in the

Table of Contents

TABLE A1

Household Participation Rates
by Selected Household Characteristics,
Unadjusted and Adjusted for Errors in Issuance,
August 1985

	Participation Rates	
	Unadjusted	Adjusted by Reducing the Numerator By 3.67%
Text Table 2:		
Household Size		
1	51.6%	49.8%
2	64.1	61.8
3	73.0	70.3
4	68.3	65.8
5	63.9	61.5
6+	77.1	74.3
Total		
Text Table 4:		
Households Containing:		
Elderly	38.7%	37.3%
Disabled	48.5	46.7
Children Under Age 18	76.7	73.9
Children Ages 5 to 17	77.5	74.7
Single Female With Children	77.7	74.8
Single Male With Children	47.6	45.8
Two or More Adults With Children	78.2	75.3
White Nonhispanic Head	50.8	48.9
Black Nonhispanic Head	80.0	77.1
Hispanic Head	56.9	54.8
Text Table 6:		
Households by Benefit Level		
<=10	28.3%	27.3%
11-25	45.6	43.9
26-50	46.8	45.1
51-75	62.9	60.6
76-100	70.2	67.6
101-150	75.5	72.7
151-200	91.0	87.7
201+	89.9	86.6

Table of Contents

Table A1 (Continued)

	Participation Rates	
	Unadjusted	Adjusted by Reducing the Numerator By 3.67%
Text Table 8:		
Households by Income As Percent of Poverty		
<=100	77.4%	74.6%
0	71.7	69.0
1-50	96.2	92.7
51-100	69.7	67.2
>100	15.4	14.8
101-130	15.8	15.2
131+	11.1	10.7
Text Table 10: Households by Income Source		
Earnings	38.2%	36.8%
SSI:		
Elderly	69.1	66.6
No Elderly	66.5	64.1
Total SSI	68.2	65.7
Public Assistance	119.9	115.5
AFDC	123.0	118.5
Other Welfare	101.1	97.4
Unemployment Compensation	78.5	75.6

Source: Participation rates are computed as the ratio of participants to eligibles. Unadjusted participant counts are from the Food Stamp Program Statistical Summary of Operations. Adjusted participant counts are also from the Food Stamp Program Statistical Summary of Operations but they were reduced by 3.67 percent to reflect the proportion of ineligible households issued benefits in error. Estimates of eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

Table of Contents

TABLE A2

Individual Participation Rates
by Selected Characteristics,
Unadjusted and Adjusted for Errors in Issuance,
August 1985

	Participation Rates	
	Unadjusted	Adjusted by Reducing the Numerator By 3.67%
Text Table 3: Individuals by Demographic Characteristics		
Disabled Living Alone	54.4	52.4
Elderly Not Alone	31.5	30.4
Disabled Not Alone	46.5	44.8
Elderly Total	38.0	36.6
Disabled Total	49.3	47.4
Children Under Age 18	76.3	73.5
Children Under Age 6	78.1	75.3
Children Ages 5 to 17	75.5	72.7
Adults Ages 18 to 59	67.4	65.0
Total Persons	66.7	64.3
Text Table 7: Income As Percent of Poverty		
<=100	81.7%	78.7
0	72.3	69.7
1-50	95.5	92.0
51-100	74.7	71.9
>100	18.2	17.5
101-130	18.5	17.9
131+	12.7	12.3

Source: Participation rates are computed as the ratio of participants to

Table of Contents

TABLE A3

Benefit Participation Rates
by Selected Household Characteristics,
Unadjusted and Adjusted for Issuance Errors,
August 1985

	Participation Rates	
	Unadjusted	Adjusted By Reducing the Numerator by 6.02%
Text Table 5: Benefits to Households Containing:		
Elderly	45.5%	42.7%
Disabled	69.9	65.7
Children Under Age 18	87.6	82.3
Children Ages 5 to 17	89.8	84.3
Single Female with Children	81.0	76.1
Single Male with Children	50.5	47.4
Two or More Adults with Children	99.8	93.7
White Nonhispanic Head	73.2	68.7
Black Nonhispanic Head	92.2	86.6
Hispanic Head	65.0	61.0
Text Table 9: Benefits to Households by Income As Percent of Poverty		
<=100	86.2	81.0
0	74.8	70.3
1-50	96.0	90.2
51-100	78.5	73.8
>100	17.4	16.3
101-130	18.0	16.9
130+	6.8	6.4

Source: Participation rates are computed as the ratio of benefits of participants to total benefits which would have been issued had all eligibles households participated. Unadjusted benefits to participants are from the Food Stamp Program Statistical Summary of Operations. Adjusted benefits to participants are also from the Food Stamp Program Statistical Summary Operations but they were adjusted down by 6.02 percent to account for benefits issued in error to ineligible households. Estimates of eligibles were derived from special tables prepared using the August 1985 analysis file developed from SIPP, 1984 and 1985 panels. The SIPP analysis file contains 27,660 households in total and 3,559 households eligible for food stamps.

Table of Contents

TABLE A4

Impact on Sampling and Nonsampling Error on Estimates of Eligibles and Participation Rates, August 1985

	Participants	Eligibles			Participation Rates		
		Wave 3/7	Wave 7	Wave 3	Wave 3/7	Wave 7	Wave 3
Persons	18560	28884	28669	29666	64.26	64.74	62.56
Households	6894	11604	11589	11821	59.41	59.49	58.32
Benefits	807265	1072262	1045559	1128494	75.29	77.21	71.53
Household by Size							
1	2329	4649	4752	4588	50.09	49.01	50.76
2	1481	2380	2287	2535	62.21	64.74	58.41
3	1217	1718	1770	1687	70.81	68.73	72.11
4	907	1369	1268	1532	66.22	71.49	59.17
5	506	817	833	812	61.92	60.73	62.30
6+	502	671	680	668	74.82	73.83	75.15
Household by Income							
<=0	475	684	652	744	69.40	72.81	63.81
1-99	135	282	316	266	47.70	42.57	50.57
100-199	662	652	753	541	101.52	87.90	122.34
200-299	1036	1052	1029	1098	98.50	100.70	94.37
300-399	1798	2436	2427	2461	73.83	74.10	73.08
400-499	1021	1921	1908	2014	53.13	53.49	50.68
500-599	684	1647	1682	1612	41.55	40.68	42.45
600-699	440	839	770	909	52.40	57.09	48.36
700-799	226	575	639	495	39.33	35.39	45.69
800-899	170	461	434	515	36.79	39.08	32.93
900-999	104	294	263	337	35.48	39.66	30.95
>=1000	190	761	716	828	24.98	26.55	22.96

benefit rates which are 72 percent for Wave 3 and 77 percent for Wave 7. Individual rates range from 63 to 65 percent.

The range in individual rates is driven by the variation in estimates of the number of eligible households of size 2 and size 4. Participation rates for households of size 2 for Wave 7 (65 percent) are almost 11 percent higher than the corresponding rates for Wave 3 (58 percent). The difference between the participation rates for households of size 4 is even more extreme (from 59 to 71 percent).

Household participation rates by level of gross income are highly volatile. While each set of rates varies in a similar manner by level of income, the actual participation rates are quite different across waves within each income class. For example, the rates for households with no income range from 64 percent to 73 percent. It is interesting to note that in most income classes, Wave 3 rates are lower than Wave 7 rates. There are simply more low-income, low-asset households in the Wave 3 file than in the Wave 7 file.

While the principal difference between Wave 7 and Wave 3 estimates of eligibles can be attributed to sampling error, there are some forms of nonsampling error which affect the outcomes. The first difference is that observations in Wave 7 of the 1984 Panel had been in the sample more than twice as long as those in Wave 3 of the 1985 Panel. Thus, sample attrition would affect the Wave 7 estimates more than the Wave 3 estimates because of the increased length of time from the initial interview. Furthermore, sample attrition has been shown to be nonrandom (Short and M^{c}Arthur, 1985). In particular, low-income households have a higher attrition rate than middle-income households. This pattern of attrition may contribute to the fact that there are more eligibles from Wave 3 than from Wave 7.

The second difference between Waves 7 and 3 is the methodology employed to compensate for data not collected in those waves. Neither of these waves contained measures of child care, shelter or medical expenses, or disability status, as it is defined for the Food

Stamp Program. Medical expenses were imputed to both waves using exactly the same procedures, and thus do not contribute to the differences in estimates of eligibles except for the randomness associated with the assignment of the error term. However, each of the other expenses was assigned to the relevant wave using a slightly different method, as discussed below.

Child care expenses were collected in Wave 5 of the 1984 Panel and Wave 4 of the 1985 Panel. These were linked to Waves 7 and 3 using the procedures discussed in Doyle and Post (1988). The principal difference in how the data were linked was the timing of the child care wave relative to the analysis sample. Hence, the ease with which the data could be integrated varied to some degree. The differences are by no means dramatic. For example, in Wave 7 of the 1984 Panel, 11 percent of the unweighted sample cases were not interviewed in Wave 5, and thus child care expenses were imputed. In contrast, 23 percent of the unweighted sample cases in Wave 3 of the 1985 panel were not interviewed in Wave 4 when the child care topical module was administered.

Shelter expenses were collected in Wave 4 of the 1984 panel, but were not collected at all in the 1985 Panel. Hence, we had to impute these expenses to all households in Wave 3. In the 1984 panel, we needed only to impute expenses to 38 percent of the cases because the remaining cases were present in both Waves 4 and 7 and did not change addresses. Therefore, estimates of the shelter deduction are subject to more error in Wave 3 than in Wave 7.

Disability status is a function of income available in both Waves 7 and 3, as well as reasons for receiving benefits from certain programs, which is determined during the first interview. The difference in the timing of each wave relative to the first interview is more than one year, and, hence, there is more error in the determination of disability status in Wave 7 than in Wave 3.

3. Impact Of Asset Measures On Estimates Of Eligibles And Participation Rates

The estimates of food stamp eligibles in 1984 and 1985 are not directly comparable because of a difference in the procedure used to construct countable assets. Hence, estimates of the participation rates between the two years will appear to vary in some instances where in fact they are comparable. In this section of the appendix, we provide an analysis of the impact of the change in participation rates attributed to the change in procedures for determining asset balances. This analysis is based solely on Wave 7 1984 panel; thus, rates used differ from the participation rates in the body of this report.

The method of determining assets in estimating 1984 participation rates was to construct estimates of nonvehicular assets by dividing asset income by an assumed rate of return on investment and then combine the results with countable vehicular assets.[19] The method of determining assets in estimating 1985 participation rates was to accumulate the countable value of reported balances in income- and non-income-producing nonvehicular assets and combine that with countable vehicular assets. Hence, the difference in methods lies in the treatment of nonvehicular assets. Both methods were applied to the observations in Wave 7 and the results are compared in Table A5.

Overall, the impact of the change in asset procedures was to decrease the number of eligibles and increase the participation rate. In particular, the procedure used in 1984 tended to understate the amount of countable financial assets held by the low-income population. This is not unexpected given that the rate of return used to estimate asset balances was an average over the entire population rather than an average appropriate for the low-income population.

---

[19]There was an adjustment of the balances recorded in the original SIPP data file in cases of item nonresponse. The Census Bureau developed imputed data for these items but an analysis of the quality of those data indicated that the imputations did not perform well for the low-income population. Hence, these values were reimputed as described in Mathematica Policy Research, Inc. (1990).

Table of Contents

TABLE A5

Impact of Asset Measures on Estimates of Eligibles
and Participation Rates,
August 1985

	Participants	Eligibles		Participation Rate	
		Wave 7 Final	Wave 7 ROR[1]	Wave 7 Final	Wave 7 ROR
Persons	18560	28669	29613	64.74	62.67
Households	6894	11589	12037	59.49	57.28
Benefits	807265	1045559	1070891	77.21	75.38
Household by Size					
1	2329	4752	4962	49.01	46.93
2	1481	2287	2399	64.74	61.72
3	1217	1770	1814	68.73	67.06
4	907	1268	1308	71.49	69.31
5	506	833	854	60.73	59.24
6+	502	680	699	73.83	71.82
Household by Income					
<=0	475	652	720	72.81	65.93
1-99	135	316	309	42.57	43.53
100-199	662	753	740	87.90	89.44
200-299	1036	1029	1083	100.70	95.68
300-399	1798	2427	2452	74.10	73.35
400-499	1021	1908	1995	53.49	51.16
500-599	684	1682	1759	40.68	38.90
600-699	440	770	791	57.09	55.58
700-799	226	639	674	35.39	33.55
800-899	170	434	455	39.08	37.28
900-999	104	263	265	39.66	39.36
>=1000	190	716	793	26.55	23.97

[1]Countable financial assets were estimated based on assumed rate of return in investment. Otherwise, eligibility and participation rates were determined in the same manner as the Wave 7, Final estimates of eligibles and participation rates.

The impact was fairly uniform across all three measures (all three participation rates computed using the 1985 procedures were 2 percentage points higher than the rates computed using the 1984 procedures). The rates did not change drastically for any household size group, and the changes in rates by income class were mixed. The participation rate among eligible households with no income rose by 7 percentage points when the methodology was changed from the 1984 to 1985 procedures. This is disproportionate in comparison to other income classes, except the $200 to $299 class, where the rate rose 5 percentage points. In all other income classes, rates only changed by one to two points.