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Food Stamp Policy Issues: Results From Recent Research

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The research papers presented in this monograph were written for the February 1990 Food Stamp Program Research Conference sponsored by the Food and Nutrition Service (FNS). The purpose of the conference is to promote dialogue on current food stamp-related policy issues among government officials, academicians, and private-sector researchers.

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I. OVERVIEW

A. INTRODUCTION

The Food Stamp Program (FSP) is a central component of America's overall strategy to provide assistance to low-income households. With annual outlays in excess of $13 billion, the program serves more than 18,500,000 participants each month (U.S. Department of Agriculture, 1989a). It provides the only form of assistance nationwide to essentially all financially needy households without imposing nonfinancial categorical criteria, such as whether households contain children or elderly or disabled members.

Furthermore, for many low-income households in America, the FSP represents a very major share of their overall household resources. For a typical AFDC family that receives food stamps, the benefits provide about 33 percent of the family's total purchasing power (U.S. Department of Agriculture, 1989b), and in states that offer relatively low AFDC benefits they can provide 50 percent or more.[1]

The basic structure of the current FSP has now been in place for more than ten years; however, the program has been revised substantially over that time as policymakers have attempted to meet the competing objectives of the program in a national environment that has itself undergone substantial change. For instance, repeated changes to the rules that determine program benefit amounts have sought to strike an appropriate balance between providing an adequate level of assistance and responding to the fiscal pressures imposed by large federal budget deficits. Similarly, the Congress has sought to ensure high levels of accuracy and fiscal integrity

[1]For example, for households that receive food stamps and AFDC in Alabama, food stamps provide approximately 55 percent of the households' gross income. (Unpublished tabulation from the Summer 1987 Food Stamp Quality Control sample.)

in the administration of the program while addressing concerns tbat complex eligibility certification and benefit issuance procedures might limit access to the program by some particularly vulnerable **low-income** households. Repeated concerns have also been expressed about maintaining work incentives while also ensuring that the program meets the needs of households whose members are unable to work.

These issues remain unresolved, and concern about hunger and the welfare of low-income households continues as we enter the 1990s. Many of the issues raised in the following papers address enduring policy concerns that have been scrutinized in the past and are likely to be raised again in future policy debates:

- How well does the FSP reach its target population of low-income households?
- Does the FSP improve dietary quality among low-income households?
- How well do the FSP and other food assistance programs meet the needs of vulnerable groups, such as the homeless population?
- How should FSP employment and training policies be structured to best serve participants?

In this introductory chapter, we first briefly discuss how the FSP works to provide background for those readers who may not be familiar with the operation of the program. We then provide an overall policy context for the questions and issues raised by each of the research papers. The remaining chapters of this monograph consist of eight research papers.

B. OVERVIEW OF THE FSP

Since the early 1960s, the FSP has expanded from a handful of state pilot programs to a major federal assistance program serving over 18 million people per month. It is the largest of the 13 different domestic nutrition assistance programs administered by USDA's Food and

Nutrition Service (FNS). This array of programs serves the general nutritional needs of low-income Americans, as well as those with special needs, such as school children and elderly persons.

People who believe that they need assistance can apply to participate in the FSP at local offices throughout the country. Typically, a food stamp office is located in each county within a state; densely populated urban counties often have multiple offices. Households which meet certain financial and other criteria are certified by the local offices to participate in the program and are issued food stamp benefit coupons monthly; the benefit amounts are based on household size and the net income available to the household to purchase food.

Food stamp coupons can be used to purchase food items at any of the approximately 230,000 food outlets and grocery stores which participate in the program nationwide. In turn, these outlets redeem the coupons for money at local banks, which are then reimbursed through the Federal Reserve System.

Responsibility for administering the FSP is shared by the federal, state, and local levels of government. At the federal level, FNS develops and publishes the program regulations which implement the relevant congressional authorizing legislation. FNS also provides overall guidance for and monitors the program.

Day-today operations are conducted by state and local governments. In some states, the FSP is administered directly by the states. In those states, the personnel who staff local program offices are state employees. In other states, the program is administered by local governments (typically counties) under state supervision. In most areas, the FSP is administered jointly with the Aid to Families with Dependent Children (AFDC) and Medicaid programs.

Program benefit outlays are paid entirely by the federal government. The costs of administering the program are shared between the federal and state governments, with the federal government reimbursing states at a matching rate of 50 percent for most administrative costs.

C. THE RESEARCH PAPERS AND THE FOOD STAMP POLICY DEBATE

FNS has sponsored recent research in each of the four policy areas delineated on page 2. Eight invited papers summarize the portion of this research most relevant to the four policy areas and form the remaining chapters of this monograph. In this section, we expand on the issues and policy tradeoffs and then discuss how the research papers address the policy issues and inform the debate.

1. Food Stamp Program Participation

As mentioned earlier, the Food Stamp Program provides assistance nationally to low-income households without imposing such categorical or nonfinancial criteria as age requirements or the presence of children. Yet it is well known that, as with other welfare programs, not all those who are eligible to participate in the FSP do so. However, the program participation rate (the ratio of participants to eligibles) is often used as an indicator of the success of social programs such as the FSP.

a. Participation Rates and Variations Across Demographic and Economic Subgroups

Although Congress, program administrators, and welfare advocates do not expect universal participation among eligibles, they do need reliable estimates of participation rates to help inform the policy debate on how well the FSP is meeting the needs of its target population. They also need to know how participation rates vary by such economic circumstances as levels of need and

by such demographic groups as elderly households. Understanding which groups tend to have lower participation rates than other groups can help focus program outreach efforts.

Estimates of participation rates have varied substantially in the available research, ranging from 24 percent to 60 percent for eligible households, depending on the data sources used, the methodologies employed, and the time periods covered. The Allin et al. paper critiques the methodologies used to obtain these estimates, and provides a new set of methodologies based on the best information available.

The study indicates that, in August 1984, 60 percent of eligiib households and 66 percent of eligible individuals participated in the FSP. Thus, about one-third of those eligible did not participate in the program. The study shows, however, that two-thirds of the eligible households received 80 percent of the benefits payable had all eligible households participated, indicating that households that were eligible for larger benefits, and hence were in greater need, were more likely to participate than were households whose benefits would have been smaller.

Although some groups participate at rates near 100 percent (such as those who receive AFDC), other groups are more difficult to serve than are the majority of needy households. We know, for instance, that only about one-third of eligiile elderly individuals participate. As the Ponza paper shows, one of the difficulties experienced by such households may be complying with documentation and other eligibility requirements. Understanding these difficulties could help improve access to the FSP and thus increase participation rates.

b. How FSP Participation Rates Have Changed Over Time

The number of participating households rises and falls with changes in program rules, the economy, and demographics. However, the more meaningful measure of the effectiveness of the

program is changes in the number of participating households as a proportion of eligible households--that is, changes in the participation rate--over time.

Available studies provide estimates of participation rates over the past 10 to 15 years, but the different data sources and methodologies used preclude any meaningful assessment of whether differences among the rates are due to any real changes in the rates. Thus, what is clearly needed is a series of participation rates over time to help identify trends that can be linked to particular changes in legislation or program operations. The Allin et al. paper summarizes a recent study that constructed a series of participation rates over time. These participation rates represent the only source of estimates based on a single data source over a lo-year period (19784988).

Although the estimates are subject to some methodological limitations, they show that the participation rates increased with the implementation of the Food Stamp Act of 1977 and then remained relatively constant. The elimination of the purchase requirement under the 1977 Act made the program more accessible to many eligible, low-income households because they were no longer required to aquire and spend cash to obtain food stamps. The estimated net effect of the 1977 Act was a 15 percentage point increase in the participation rate.

c. Reasons for Nonnarticiuation in the FSP Among Eligibles

At least as important as estimating the participation rate reliably is identifying the reasons for nonparticipation in the program. For example, households with higher incomes that are eligible for small benefit amounts may not believe that the amount of the benefit is worth the effort of applying. On the other hand, some households may not participate because they are not aware of their eligibility, signaling the need for changes in program operations or outreach that might encourage greater participation. Unfortunately, however, many of the steps which can

be taken to increase access to the program increase administrative costs as well. Thus, public officials must balance the competing goals of improving access to the program and meeting budget constraints. Allin et al. show that although many of the studies on the determinants of nonparticipation have limitations their results have been fairly consistent. Nonparticipants have tended to report that they were not participating 'due to three major reasons:

1. They were not aware that they were eligible.
2 They did not want the food stamps or believed that they did not need them.
3. The costs of participation were too high relative to the level of benefits received.

However, Allin et al. indicate that these findings do not go far enough in enhancing our understanding of the motivations behind the behavior of eligible nonparticipants, such as why in fact respondents believe that they do not need the assistance. More research in this area must be undertaken to better understand what influences the participation decision.

d. Events Associated with Households' Entering or Exiting the FSP and the Factors That Affect the Length of Food Stamp Receipt

Data on FSP participation may provide information on the specific events that induce households to enter or exit the program This knowledge can guide efforts to facilitate access to and reduce long-term dependence on the program. For example, employment and training programs that are developed to reduce long-term dependence by increasing employment and earnings prospects may benefit from information on the types of employment-related events that lead to program exits.

The paper by Burstein and Visher finds that almost half of all new food stamp caseload openings are associated with a change in household composition. Of those not associated with

a change in household composition, a third are associated with a reduction in earnings or other taxable income. They also find, not surprisingly, that the most common reason for exiting the program is an increase in income.

Employment and training (E&T) programs help participants gain the skills necessary to increase their earnings and their net income. Evaluations of the effectiveness of both the AFDC and food stamp E&T programs are now being conducted, and the initial results of the food stamp E&T evaluations are discussed later in this monograph by Puma and Werner.

In helping states target their E&T programs most effectively, it is useful to know the length of time that households with particular characteristics tend to receive food stamps and the factors that influence the probability of a case's closing in a given month. Burstein and Visher find that households with work registrants, wage earners, or single persons have shorter food stamp spells than do other food stamp participants. Households with elderly members tend to remain in the program for longer periods than do other recipients, but they are exempt from E&T programs, and they are not likely to receive increases in income due to increased earnings. AFDC recipients also receive food stamps for longer periods than do other food stamp recipients, but are exempt from E&T programs if they meet AFDC work-related requirements.

2. Dietary Effects

While it is generally agreed that improving the quality of the diets of recipients is an important policy objective of the Food Stamp Program, no clear consensus seems to have been reached on how such program features as the form of the benefit are associated with the effects of the program on the quality of diets. As in other areas of FSP policy, complex tradeoffs exist among competing objectives, and the available research has not provided clear guidance on the magnitude of the tradeoffs involved.

One policy concern is the extent to which FSP benefits increase the nutrients that are available to recipient households. It has been argued that the FSP could fail to improve dietary quality in one of the following ways:

- A household uses food coupons to purchase the same dollar amount of food that it would have purchased with cash in the absence of the program, and uses the freed-up cash to purchase other items, such as clothing and shelter.

- A household uses its food coupons to purchase an increased dollar amount of food over what it would have purchased in the absence of the program, but the increased spending does not improve nutrient availability in households. This outcome could occur if the household purchased more highly processed food or ate more meals- away from home, since, in general, the nutrient density per dollar is less for highly processed foods and for meals purchased away from home.

. The original FSP was designed to ensure that most recipient households would increase their expenditures on food Recipients were required to purchase the full allotment of stamps for their household size, with the amount of the purchase requirement varying by income. The purchase requirement was waived for households with very little or no income. In the Food Stamp Act of 1977, the Congress eliminated the purchase requirement. Opponents of this change argued that, because the legislation would have a negative impact on food consumption, it would also reduce the effectiveness of the program at ensuring adequate nutrient intake among recipients.

Recent welfare reform proposals of three states would move one step further. Welfare reform demonstrations currently approved for Washington, Alabama, and San Diego County, California are substituting direct cash payments for some participants on an experimental basis. Like those who were against eliminating purchase requirements, opponents of direct cash payments argue that the dietary effect of the program is likely to diminish as recipients are

provided an even easier way to spend fewer dollars on food This outcome could occur for households which currently receive more stamps than they prefer to allocate to purchases of food. Opponents also argue that dietary quality may suffer if recipients increase their purchases of food away from home. *The additional* cash income may also bring new demands to use the income on other purchases.

On the other hand, *given* that the program is able to improve the diets only of those households which participate, proponents of eliminating the purchase requirement in 1977 argued that coming up with the cash to purchase the stamps was a significant barrier to participation for many households. If these households could not participate, the FSP program could not affect the nutrients that are available in the foods that they used. After the Food Stamp Act of 1977 was implemented, participation did increase substantially. Similarly, proponents of switching to direct cash benefits argue that the conversion may enhance the effect of the program on the quality of the diets of eligible households by further increasing participation in the FSP. Further, if direct cash benefits reduce administrative costs, more benefits can be provided for the same aggregate program cost.

Therefore, some people argue that food stamp coupons effectively increase dietary quality among recipients by increasing food consumption, while others argue that switching to direct cash benefits would be more effective at improving dietary quality among recipients by increasing their participation and reducing administrative costs. The paper by Devaney and Moffitt, based on 1979430 data, addresses this issue by comparing the effects of ordinary cash income and FSP coupons on the dietary quality of recipients. Their findings indicate that the FSP increases nutrient availability by a significantly greater amount than does the equivalent amount of cash income. Specifically, the effect of a one-dollar increase in the food stamp benefit is from 3 to 7 times greater than a one-dollar increase in cash income for most nutrients. This difference is

substantial, but the evidence may not be directly applicable to a cash food assistance benefit. That is, cash assistance that is explicitly earmarked as food assistance may have a different effect on food purchases than do general increases in ordinary cash income. The forthcoming evaluations of the food stamp cash-out demonstrations will provide direct evidence on the effect of cash food assistance versus coupons on food expenditures and dietary quality. If the cash-out findings for cash versus coupon forms of food assistance are similar to the findings of Devaney and Moffitt, they may be viewed as a strong rationale for maintaining in-kind food benefits.

3. Targeting Special Needs

As indicated earlier, the FSP has a broad mandate to provide assistance to all financially needy households. However, policies and program features that work well for the majority of needy households may not be appropriate for such specific groups as homeless or elderly persons or residents of Indian reservations. For example, homeless persons, and to a lesser extent elderly persons, are reported to have difficulty in complying with the requirements of the FSP for the thorough documentation of eligibility. Reducing these eligiiility documentation requirements might improve the accessibility of the program to and thus enhance the participation of such groups as homeless individuals, but could conflict with the goal of ensuring both that benefits go only to eligible households and that fraud and abuse are minimized. This example illustrates the difficult policy tradeoffs involved in continuing to meet the objectives of the program associated with serving the majority of households while also meeting the needs of particular groups.

Other factors make it particularly difficult for a broad-based national program such as the FSP to serve those with special needs. Homeless persons tend to have no fixed addresses or facilities for preparing food, American Indians often live in isolated locations remote from FSP

eligibility offices and from participating food stores, and a substantial portion of elderly persons suffer from physical or mental functional limitations that make dealing with FSP eligibility and issuance procedures difficult. How can domestic food policy recognize these substantial challenges?

Three of the research papers focus on the special needs of different groups of low-income households and provide information pertinent to addressing this question. Burt and Cohen examine participation in the FSP by homeless persons and the effectiveness of the prepared meals provision at making the program a better provider of services to homeless persons. Ponza examines the effectiveness of current USDA food assistance programs at meeting the needs of low-income elderly persons. Finally, Usher discusses the Food Distribution Program on Indian Reservations that has been established to serve American Indians whose remote location makes program administration and access to participating food stores problematic.

a. Size and Composition of Unmet Need

When considering how best to serve the special needs of particular groups, we must first identify these groups and their sizes and characteristics. The studies presented herein suggest that considerable unmet need exists among such special population groups as homeless and elderly persons. In particular, Burt and Cohen report that 38 percent of the homeless households in their study sometimes or often did not get enough to eat, and 75 percent ate less than three meals a day. They also report that, while virtually all of the homeless households in their study had incomes and assets low enough for FSP eligibility, only 18 percent were participating in the FSP.

Ponza's findings for the low-income elderly indicate that, while the economic status of elderly persons has improved dramatically in the last 20 years, over 13 million are low-income

(live in households whose monthly income is less than 185 percent of the poverty threshold), and that such low-income elderly households exhibit other characteristics that tend to increase their risk of inadequate nutrition. The FSP appears to be reaching slightly over one-third of eligible elderly individuals, and all food assistance programs in combination appear to be reaching no more. than half of all low-income elderly persons.

b. Balancing Program Accessibility and Accountability

A second policy issue which arises when considering how the needs of special groups can be met is how the demands on eligibility certification procedures to keep error rates low can be balanced against the more limited capabilities of some recipients to meet procedural and documentation requirements. Policymakers should consider the number of potential recipients who have difficulty with certification requirements, the aspects of these requirements that are problematic, and the options available for reducing difficulties in meeting certification requirements, as well as other policy tradeoffs. Should the program change certification requirements or provide more assistance to such recipients in meeting the requirements? (The Hunger Prevention Act of 1988, for example, mandates developing a program to help states simplify the application forms for food stamps.) ,Altematively, might these groups be served better by programs that have less formal eligibility procedures, such as the congregate meals program?

This inherent conflict-between the tax-paying public's demand that income assistance programs be administered rigorously and the difficulty experienced by special-needs groups in meeting the procedural and documentation requirements for eligibility--appears to be acute. Burt and Cohen and Ponza point to the difficulties of special-needs groups in complying with eligibility requirements. In their study of the homeless, Burt and Cohen report that, while only 18 percent

of the homeless population were currently participating in the FSP, two-thirds of the sample had previously had contact with the program. They also indicate that local FSP offices have difficulty in determining the eligiiility of homeless persons due to insufficient documentation and a failure to meet procedural requirements, such as keeping appointments for interviews with caseworkers. Some problems were also reported in developing workable coupon issuance procedures for homeless persons.

While elderly persons participate at roughly double the rate of homeless persons, Ponza indicates that many elderly nonparticipants report that accessibility is a problem. Particularly for the older elderly, physical and mental limitations greatly exacerbate the difficulty of meeting program requirements. In structured discussions with groups of low-income elderly, many reported that they had difficulty in reaching the local eligiiility office, and then only to find that they did not have all the required documentation. A number of elderly persons reported that they did not complete the process because they were frustrated with trying to meet the requirements. A few who were certified as eligible reported that traveling to issuance sites and waiting in line were also difficult for them. One step toward addressing this issue was taken in the recent Hunger Prevention Act of 1988, which requires state agencies to provide applicants with a list of the documentation and other requirements necessary to complete the application process. While total solutions to such policy conflicts are inherently difficult, the two studies by Burt and Cohen and Ponza present important new data and insights that will be useful to policymakers as they consider potential modifications to current program operations.

c. Which Benefit Form and Delivery Mechanism Best Meets the Needs of Special Populations?

Providing food assistance in the form of coupons which may be exchanged for food in grocery stores is generally an effective benefit-delivery form for stable households with cooking

facilities. However, food coupons may not be very useful to homeless persons who do not have access to cooking facilities and elderly persons who are unable to shop and prepare foods. The studies on special-needs populations presented herein examine how well the various food assistance delivery mechanisms--food coupons, direct payments, and home-delivered meals--work for special-needs groups, and they contribute to the debate about which of these forms works best. Many alternative forms of food assistance are already available on a limited scale. For example, food stamp benefits are "cashed out" for SSI recipients in Wisconsin and California. Since 1986, homeless persons may use their food coupons to purchase prepared meals from authorized nonprofit providers. However, when Burt and Cohen examined this prepared-meals provision, they found that too few authorized providers entered the program for it to have much practical effect. Consequently, they question whether a food coupon system is an effective benefit delivery mechanism for much of the homeless population.

As reported by Ponza, elderly persons currently benefit from alternative benefit forms under USDA and Title III of the Older Americans Act. In addition to the FSP, home-delivered meals are available to homebound frail elderly persons; congregate meals, for which food stamps may be used to cover the suggested contribution, are available to elderly persons in many areas; and commodity distribution programs are also available. Ponza finds that each of these alternative benefit mechanisms serves a somewhat different group of the elderly population, and that multiple approaches are necessary to meet their diverse needs.

In response to a concern that access to the FSP and participating food stores was difficult for some American Indians, the 1977 Food Stamp Act allowed American Indians to choose between commodity distribution and food stamps. Usher describes the operation of the food distriiution program and the plans for the forthcoming evaluation. That evaluation will examine

the pros and cons of food distribution versus food stamps for delivering food assistance to American Indians on reservations.

There does not seem to be any one best form and delivery system for providing food assistance to the special-needs populations. It appears that the needs of these population groups are diverse and are best met with multiple benefit forms and delivery systems. While multiple food assistance programs may appear duplicative and inefficient, the multiple approach may be the only feasible method.

4. Emolovment and Training

Much of the welfare reform debate has focused on reducing long-term welfare dependence among recipients, preparing them for the work force, and encouraging job-ready welfare recipients to search actively for and to engage in work Congress has addressed these issues by establishing employment and training programs for able-bodied welfare recipients for most low-income assistance programs. For the FSP specifically, Congress passed the Food Security Act of 1985, which requires that all states operate employment and training programs. The ultimate goal of these E&T programs is to reduce long-term dependence and increase self-sufficiency among welfare recipients by enhancing their employment and earnings prospects, thereby reducing government expenditures on assistance programs and enhancing overall national production.

Much of the recent welfare reform activity has focused on designing successful employment and training programs. Previous research on the effectiveness of employment and training has yielded mixed and widely varied results. While some evaluations have found that employment and training services have positive impacts on employment and earnings, other studies have found that they are ineffective.

In response to the need for research on E&T programs, Usher, Gogan, and Koo have analyzed long-term dependence among FSP work registrants. Puma and Werner discuss how states currently plan and operate E&T programs. Both studies take the first important step of clarifying and describing the policy problem so that policymakers can develop strategies to reduce costs and target services effectively.

First, Usher et al. set out to determine both the extent to which FSP work registrants rely on food stamps for long-term support and the proportion of total benefits received by long-term participants. Their findings on long-term dependence can help policymakers determine whether current E&T services are appropriate for the population being served, and how services should be targeted toward those participants who are most likely to benefit from them. Targeting services effectively is particularly important given the limited E&T funds available and the large number of persons who are to be served.

Usher et al. find that some work registrants do in fact depend on food stamps for relatively long periods of time, and that they do consume a substantial proportion of FSP resources. However, most of the work registrant households in their study received food stamps for six months or less, left the program, and did not return within two to two and a half years. These households with short-term receipt consumed a relatively small proportion of total food stamp allotments.

On the other hand, work registrant households which experienced multiple spells of participation constituted only approximately one-third of the total population of work registrant households, but consumed nearly half of the total food stamp allotments. Finally, the group that consumed the largest portion of the total benefits were those households that experienced a single spell that lasted longer than six months. These findings suggest that E&T programs should

focus services on households which experience a single spell on food stamps that lasts longer than six months, since these households demonstrate the greatest dependency on food stamps.

Second, FNS has funded a comprehensive study of the operations and effectiveness of the E&T program. As part of this overall evaluation, Puma and Werner conducted an initial examination of the operation of state E&T programs and a description of E&T participants, which can be used to help determine whether current services are likely to be appropriate given the population's characteristics. Because it was not clear how the states would implement E&T provisions, Puma and Werner investigate how they have planned and operated E&T programs.

Puma and Werner find that states have taken the opportunity given to them by the Congress to design programs that suit their unique needs. Rather than simply expanding the existing job-search programs, states have been innovative. Specifically, three-quarters of the local Food Stamp Agencies (FSAs) that were sampled have implemented entirely new programs, or programs that are distinctly different from their previous programs.

In FY 1988, states provided a variety of employment and training services to one million mandatory work registrants and volunteers. Although job search is the most common service provided by States, they have begun to provide such services as vocational education services and work experience. States have provided these services through various sources, such as the Job Training Partnership Act, local education institutions, and other public and private agencies. Many states have also addressed the needs of individual participants by instituting flexible reimbursement schemes for participants' out-of-pocket expenses and by providing in-kind services, such as child care and transportation services. Therefore, Puma and Werner find that states have generally responded positively to the employment and training legislation by expanding and improving employment and training services for the food stamp work registrant population.

Puma and Werner also identify the characteristics of the work registrant population which may be useful in determining the types of individuals who should be targeted. They find that, in general, state E&T programs are serving young, unmarried, and nonwhite FSP participants with little education and work experience. These E&T participants are not well prepared to enter the job market, and can most likely benefit from effective and efficient employment and training programs.

Puma and Werner and Usher et al. present important, initial findings which will inform policymakers as they attempt to design effective E&T programs. Because these studies present preliminary findings and because the E&T program itself is in the initial stage of implementation, it is too early to determine the success with which E&T programs reduce long-term dependence and program costs. Research in the future, especially the comprehensive evaluation funded by FNS, will provide more in-depth information to guide policymakers in addressing the issues involved in designing effective E&T programs.

D. CONCLUSIONS

As we enter the 1990s, the following four key issues are likely to be at the center of policy debates about the future form of the FSP:

- How well does the FSP reach its target population of low-income households?
- Does the FSP improve dietary quality among low-income households?
- How well do the FSP and other food assistance programs meet the needs of vulnerable groups, such as the homeless population?
- How should FSP employment and training policies be structured to best serve participants?

The research papers comprising the remaining chapters of this monograph provide important new insights into each of these key issues. In some cases, these insights can be and have been used directly to help inform policy development. In other cases, they provide a focus for the research and data collection efforts necessary to structure food assistance programs more effectively. We briefly summarize our interpretation of those insights in the remainder of this conclusion.

1. Reaching the Target Population

The FSP is successfully reaching the majority of its low-income target population, as supported by estimates that two-thirds of all eligiile persons actually participate, and that those participants receive 80 percent of the benefits payable if all eligible households participated. Notwithstanding this success, it also appears that a majority of program eligibles in more difficult-to-serve groups (such as elderly and homeless persons) are not being served. Reaching these difficult-to-serve nonparticipants will continue to be a challenge.

2. Improving Dietary Quality

Two major issues are associated with dietary quality-the extent to which the program improves nutrient availability to participants, and the manner in which dietary quality would be affected by a shift to cash benefits. The available evidence indicates that the current FSP, with its food coupon benefit form, does improve dietary quality, although no consensus has been reached about the magnitude of the effect on nutrient availability. Some advocates of cash food assistance argue that cash would serve the needs of recipients more effectively, reduce administrative costs, reduce fraud and abuse, and improve access to the program. The evaluations of the food stamp cash-out demonstrations now underway should provide more

definitive results about the differential effects of food coupons and cash food assistance on the dietary quality of participants, as well as on administrative costs and other outcomes.

3. Meeting the Needs of Vulnerable Groups

Major efforts, including legislative changes, have been made to enable the FSP to serve the homeless and other difficult-to-serve groups more effectively. Despite these efforts, large segments of these inherently difficult-to-serve but vulnerable groups are not receiving food stamps. Meeting the needs of these groups more fully raises difficult policy choices. Substantial increases in the FSP participation rate are likely to entail policy changes to facilitate access but will also generate higher administrative costs in addition to the costs of providing benefits to the new program participants. Even with major efforts, many of the individual circumstances of persons in the difficult-to-serve groups preclude the effective use of food coupons. Thus, more basic questions should be asked: What is the appropriate role of the FSP, and what other programs, such as congregate meals, would serve the nutrition assistance needs of vulnerable groups more effectively?

4. Structuring Employment and Training Policies

Several issues surround the greatly enhanced policy focus on reducing long-term dependence through employment and training programs. At this early stage, our FSP-specific knowledge is limited to descriptive information on the characteristics of work registrants and long-term recipients, and on the implementation of the new E&T programs at the state and local levels. Thus, there are far more questions than answers, although a comprehensive evaluation of E&T is underway that should provide guidance on E&T issues. Given that E&T funding is limited, policymakers need to consider how the programs should be targeted.

II. CURRENT PERSPECTIVES ON FOOD STAMP PROGRAM PARTICIPATION

Susan Allin, Harold Beebout,
Pat Doyle, and Carole Trippe

A. INTRODUCTION

The purpose of the Food Stamp Program (FSP) is to enable low-income households to aquire and maintain a nutritious diet. The U.S. Congress has legislated eligibility requirements to define the target population--the group of persons to whom the program directs its assistance. In general, the target population includes any person, or group of persons living together and sharing food purchases and preparation, whose income and assets in a given month fall below specified limits. The size of the target population varies according to changes in the program eligibility requirements, as well as by economic conditions and the demographic characteristics of the population.

Target households actually receive food stamps only if they apply for benefits and are certified to be eligible. Although Congress, policymakers, and others may not expect universal participation in the program, they often express interest in the proportion of the target population who apply for and receive food stamps. Indeed, in recent years, the program participation rate (the ratio of participants to those who are eligible) has become one of the most commonly used criteria to evaluate the performance of social programs.[2] In particular, the participation rate is the primary measure of the extent to which the target population is being served.

Estimates of participation rates have varied substantially over the years, ranging from 24 percent to 60 percent for eligible households (West, 1984, and Doyle and Beebout, 1988). To

[2]Other criteria used to evaluate the FSP pertain more to how the program is administered, such as operational efficiency, the adequacy of benefits, and benefits issued in error.

investigate the accuracy of these estimates and to obtain a better understanding of the participation behavior of eligible households, the Food and Nutrition Service (FNS) sponsored a series of reports that examine participation in the FSP-Current Perspectives on Food Stamn Program Participation. Four reports were prepared for this series:

1. Doyle and Beebout (1988) use the beat information available to provide a new set of participation rate estimates.

2 Trippe and Beebout (1988) examine participation rates among the poverty population.

3. Trippe (1989) examines the variation in estimated participation rates, critiques the methodologies used to obtain those estimates, and documents how participation rates have changed over time.

4. Allin and Beebout (1989) identify the determinants of participation in the FSP and why some eligible households do not participate.

Together, these reports provide a substantial base of knowledge on participation in the FSP. This paper provides an overview of the material covered in the series. Section B provides background material on participation rates, while Section C reviews the major findings of the reports included in the series. Section D presents the conclusions drawn from the series and offers suggestions for future research on participation in the FSP.

B. BACKGROUND

Since no single measure of participation can adequately answer all questions about participation in the FSP, researchers have developed three measures of program participation. Each of the three program participation rates that appear in the literature--the individual rate, the household rate, and the benefit rate-is more or less suitable than the other two for answering a given policy question.

Defined in its simplest terms, a program participation rate is the ratio of the number of program participants to the number of program eligibles-both participating and nonparticipating. The following are the variants of this definition that are found in the literature:

- The individual participation rate is the ratio of the number of persons in participating households to the number of persons in eligible households. The individual rate is useful for examining the number of persons who benefit from the program and the participation of particular subgroups of the target population.
- The household participation rate is the ratio of the number of participating households to the number of eligible households. The household rate is most commonly used in studies on participation behavior-studies which focus on a model of the household as the decision-making unit.
- The benefit rate is the ratio of the amount of benefits issued to participants to the amount of benefits that would have been issued had all eligiiles participated in the program. This rate may be the best overall measure of how well the FSP is meeting the need for assistance among the target population (although it has not been used extensively in the literature).

Estimates of FSP participation rates will obviously vary according to the particular measure used in the analysis-that is, the individual, household, or benefit rate. However, as shown in Table 1, even studies that have focused on generating estimates of the same measure have arrived at very different results. Depending on the data sources used and the methodology employed, the participation rate estimates in Table 1 range from 24 percent to 60 percent for households and 38 percent to 66 percent for individuals. Trippe (1989) argues that these differences are due in large part to:

- An inability to measure eligiile individuals directly
- Limitations in the household survey data used to estimate eligible individuals and the different methodologies that are used to adjust for those limitations
- Differences among the data sources used to measure the number of participants

TABLE 1

INDIVIDUAL, HOUSEHOLD, AND BENEFIT PARTICIPATION RATES

Studies (Date)	Data Source/ Reference Year(s)	Individual Rate	Household Rate	Benefit Rate
A. Estimates Using Household Survey Data on Participants				
West (1984)	CESD[a] - 1973-74		24%	
Coe (1979)	PSID[b] - 1976		41%	
Coe (1983)	PSID[b] - 1979		46%	
Brown (1988)	CES[c] - 1984-85		28%	
U.S. GAO (1988)	PSID[b] - 1986		44%	
Czajka (1981)	ISDP[d] - 1979		28%-31%	
Bickel and MacDonald (1981)	ISDP[d] - 1979		47%	
Ross (1988)	SIPP[e] - 1984	51%	41%	
B. Estimates Based on Administrative Data on Participants				
MacDonald (1975)	Decennial Census - 1974	38%		
Beebout (1981)	SIE, CPS[g] - 1979, 1981	61%-69%		
Czajka (1981)	ISDP[d] - 1979	56%		
Doyle and Beebout (1988)	SIPP[e] - 1984	66%	60%	80%
Ross (1988)	SIPP[e] - 1984	66%	58%	

SOURCE: Table 1, Trippe (1989).

[a]Consumer Expenditure Survey, Diary Portion.
[b]Michigan Panel Study of Income Dynamics.
[c]Consumer Expenditure Survey.
[d]1979 Income Survey Development Program Research Test Panel.
[e]Survey of Income and Program Participation.
[f]Survey of Income and Education.
[g]March Current Population Survey.

The major barrier to measuring the participation rate has been the lack of sufficient information to estimate precisely the number of persons or households eligible for the FSP (the denominator of the participation rate). In particular, researchers have had to rely on household survey data that do not contain all the income, assets, expense, and household composition information that is necessary for replicating the FSP eligibility rules. Consequently, researchers have either ignored some of the eligibility rules or used a variety of approaches to estimate the inadequate or missing information.[3]

Participation rate estimates also vary according to whether administrative data or household survey data are used to estimate the number of program participants (the numerator of the participation rate). FSP administrative counts of participants provide a more accurate measure of participants than do household survey data, estimates that are derived from the latter tend to be understated because the data underreport food stamp receipt. Such underreporting is apparent in the rates presented in Table 1; the estimates of the number of participants based on administrative data are noticeably higher than those based on household survey data.

In general, studies that rely on administrative data to estimate the number of participants and on recently released Survey of Income and Program Participation (SIPP) data (or data from the 1979 Income Survey Development Program (ISDP) Research Test Panel) to estimate the number of eligibles are the most precise. As discussed earlier, administrative data tend to provide more accurate estimates of the number of program participants, and the monthly SIPP data (and ISDP data) provide information on most of the criteria that are used to determine FSP eligibility.

C. FINDINGS

Clearly, some uncertainty surrounds the exact proportion of the FSP-eligible population that actually participate in the program. In this section, we present recent estimates of FSP

[3] The strengths and weaknesses of the nationally representative household surveys most commonly used to estimate the FSP-eligible population are listed in Appendix Table A1.

participation rates and discuss how they vary by demographic and economic characteristics. We also discuss how participation rates have changed over time, the trends in participation among the poverty population, and the determinants of participation.

1. FSP Participation Rates. August 1984

Doyle and Beebout (1988) provide estimates of participation in the FSP based on administrative estimates of program participants and benefits and on estimates of the number of eligibles drawn from SIPP. These rates are summarized in Table 2. The Doyle and Beebout estimates indicate that for the 50 states and the District of Columbia in August 1984:

- Sixty-six percent of eligible individuals participated in the FSP.
- Sixty percent of eligible households participated in the FSP.
- Participating households received 80 percent of the benefits payable had all eligible households participate&

TABLE 2

ESTIMATED FSP PARTICIPATION RATES, AUGUST 1984

	Household Rate	Individual Rate	Benefit Rate
Estimated Participation Rate	60.0%	65.9%	79.5%

SOURCE: Table 1, Doyle and Beebout (1988).

The individual rate was 6 percentage points higher than the household rate, indicating that larger households were more likely to participate than smaller ones. The fact that the benefit rate was 20 percentage points higher than the household rate implies that households that were eligible

for larger benefits, and hence were in greater need, were more likely to participate than were households whose benefits were smaller.

a. Participation Rates by Selected Demographic Characteristics

The participation rate estimates in Doyle and Beebout showed considerable variation across selected demographic groups:

- Regardless of the participation measure used (individual, household, or benefit), pre-school-age children and school-age children participated at a higher rate than average. For example, the individual rates were 80 percent for preschoolers and 74 percent for school children. The benefit rate for households with school children was 87 percent, compared with an overall benefit rate of 80 percent.

- Among elderly persons, only one-third of eligible individuals participated, although the rate was higher among those who were living alone (40 percent) and was higher still among those who were receiving Supplemental Security Income (SSI) (65 percent).

- Among disabled persons, approximately half of the individuals (45 percent) and households (52 percent) participated, receiving 68 percent of the benefits payable had all eligible households participated.

- Among households headed by a single woman with children, participation was estimated to be approximately 100 percent.'

b. Particination Rates by Selected Economic Characteristics

The estimates for eligible individuals and households whose economic characteristics differed showed strong variation as well:

- The program appears to serve those with the greatest economic need. Individuals and households whose incomes were below the poverty threshold participated at considerably higher rates (81 percent and 75 percent, respectively) than did eligible individuals and households overall.

- In general, household participation rates increased as benefits increased, estimates ranged from 29 percent for monthly benefits of less than $10 to 98 percent for monthly benefits of greater than $200.

'The actual participation rate for these households was 102 percent. The estimate exceeded 100 percent because the data contained measurement and sampling errors.

- Participation increased as household size increased, ranging from a participation rate of 47 percent for one-person households to a rate of 81 percent for households with six or more persons.

- Households with earnings had a lower-than-average participation rate (37 percent), whereas households that were receiving SSI, unemployment compensation, or public assistance participated at higher-than-average rates (67, 66, and 100 percent, respectively).[5]

2 How FSP Participation Rates Have Changed Over Time

Unfortunately, because the literature contains no complete time series of estimated participation rates among the eligiile population, it is not possible to assess how FSP participation rates have changed since the program started.' The studies reviewed in Trippe (1989) investigated participation during various years from 1973 to 1986, but the different data sources and methodologies used preclude any meaningful assessment of the proportion of the differences in their estimates that is attributable to any real change in the rates. The eligible and participating populations have varied over time according to changes in program rules, economic conditions, and demographics. However, those changes affect the participation rate only if the relative difference between the number of participants and the number of eligibles changes.

Trippe (1989) constructed a series of participation rates over time based on a reasonably consistent set of data sources and methodologies. The numbers of participants used were actual values based on administrative data. The estimated number of eligibles, however, were produced as a by-product of routine updates of the microsimulation model used by FNS (MATH®) to evaluate the cost and distriiutional effects of proposed program changes. Although the estimates were not produced to construct participation rates, and thus have many limitations, they represent

[5]The actual participation rate for households that were receiving public assistance was 129 percent; it exceeded 100 percent because the SIPP contained measurement and sampling errors.

the only source of estimates based on a single data source over a lo-year period (1978-1988).[6] Table 3 shows that the (individual) participation rate increased between 1978 and 1981, then dropped slightly in 1982, and remained relatively constant between 1982 and 1988. Although it

TABLE 3

ESTIMATES OF FSP PARTICIPATION RATES, 1978-1988

	Reference Year for the Estimates						
	1978	1979	1981	1982	1984	1985	1988
Individual Participation Rate	43%	58%	65%	59%	59%	60%	60%

SOURCE Table 3, **Trippe (1989).**

is likely that the levels of participation rates shown in the table are underestimated somewhat due to limitations in the data that were used, the relative changes in the rates over the lo-year period reflect some of the major programmatic and economic changes that occurred.

One programmatic change that has been shown to have a significant effect on the participation rate was the elimination of the purchase requirement (EPR), under the Food Stamp Act of 1977. Until the EPR went into effect, eligible households were required to spend a portion of their own money to obtain a given dollar value of food stamps. The EPR, implemented in late 1978 and early 1979, made the program more accessible to many eligible low-income households because they were no longer required to acquire and spend cash to obtain the assistance. On the other hand, other provisions of the 1977 Act restricted the PSP-eligible population. As shown in Table 3, the net effect of the 1977 Act was a 15 percentage point increase in the participation rate between July 1978 and July 1979.

[6] A discussion of the estimation procedures and the limitations of this series of estimates is contained in Trippe (1989).

3. Trends in Participation Among the Poverty Ponulation

The Bureau of the Census reports that 32.6 million persons were in poverty in 1987. **Since the** FSP is the only assistance program that is widely available to low-income households without the imposition of categorical restrictions, the logical question is, what proportion of persons in poverty actually receive food stamps? However, important differences exist between the official definition of poverty and the definition of need used to determine eligibility for food stamp assistance. Thus, a more meaningful question is, what percentage of the poverty population eligible for assistance actually receives food stamps?

Trippe and **Beebout** (1988) report estimates of the FSP participation rate among the eligible poverty population for each year from 1980 to 1987, as shown in Table 4. The participation rate reflects the average monthly number of FSP participants whose household income is at or below the official poverty line relative to the number of persons in poverty who were eligible for the FSP.

TABLE 4

ESTIMATES OF FSP PARTICIPATION RATES AMONG THE POVERTY POPULATION, 1980-1987

	Reference Year for the Estimates							
	1980	1981	1982	1983	1984	1985	1986	1987
Percentage of the FSP-Eligible Population Receiving Food Stamps	81.5%	79.7%	77.4%	77.6%	77.5%	76.4%	76.4%	74.4%

SOURCE: Table 3, Trippe and **Beebout** (1988).

Previous inquiries into the question posed here have faced methodological difficulties due to the comparability of measures for the two populations-those in poverty and those eligible for food stamps-and because data to adjust those measures for comparative purposes were limited.

The estimates reported herein are substantially more accurate and consistent than previous estimates, because they are based on more accurate adjustments now made possible with information in SIPP.[7]

The percentage of FSP-eligible persons in poverty who participated in the FSP ranged from 74.4 percent to 81.5 percent over the eight-year period. The FSP participation rate for eligible individuals in poverty declined between 1980 and 1982 (from 82 to 77 percent), then remained close to the 1982 level through 1986, and declined again in 1987 (74 percent). The decline during the first years of the decade may be attributable to the large (17.5 percent) increase in the number of persons in poverty between 1980 and 1982. The "new poor" of that period may have been less likely to participate in the FSP than was the poverty population before 1980, thereby contributing to the reduction in the participation rate. For example, they may have had greater assets or attached more stigma to using food stamps than did the poverty population of earlier years.

4. The Determinants of FSP Participation

Since recent estimates of the Food Stamp Program participation rate indicate that a significant minority of eligible households do not participate in the program (see Doyle and Beebout, 1988; and Ross, 1988), the reasons for nonparticipation in the FSP are of considerable interest. Three specific questions are particularly relevant:

1. What are the primary reasons that eligible persons or households do not participate in the FSP?
2. How do participation rates vary across different types of households, and what are the reasons for the variation?
3. How do persons or households decide whether to participate, and how might changes in program structure or operations influence their decisions?

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[7] See Trippe and Beebout (1988) for a description of the methodology.

Many researchers have attempted to answer one or more of these questions, and their attempts comprise a diverse body of literature that must be synthesized by policymakers as they address nonparticipation in the FSP.

Allin and Beebout (1989) reviewed this body of literature, critically evaluating the methodologies employed In this section, we draw together and summarize the findings reported in the literature as they pertain to each of the three questions outlined above.

a Reasons for Nonparticipation

- When asked why they were not participating in the FSP, nonparticipants tended to respond that they were unaware of their eligibility, that they did not need the stamps, or that the costs of participation (such as stigma, distance to the program office, and the effort necessary to meet FSP eligibility certification requirements) outweighed the potential benefits.

b. Variations in Participation Rates Across Eligibles

- Eligible households that were headed by single men, persons who were employed, or persons who were relatively more educated, as well as those who owned their home, were less likely to participate in the FSP than were otherwise comparable households.

- In contrast, eligible households that were headed by single women, that contained children, or that were nonwhite, as well as larger households, were more likely to participate in the FSP than were otherwise similar households.

- Eligible households whose incomes were lower and that were thus eligible for relatively large benefits tended to participate at higher-than-average rates.

- Participation in other assistance programs increased the likelihood of participation in the FSP. It is plausible that the households that were already receiving other forms of assistance were needier, had better information about the FSP, had less negative attitudes about participating in government assistance programs, had better access to program offices, or needed to expend less additional effort to meet FSP eligibility certification requirements (or some combination of the above) than was true of comparable households that were not receiving other assistance.

- Eligible households headed by elderly persons were less likely to participate in the FSP in a given month--but if they were participating they were less likely to leave the program--than were otherwise comparable households.

- Eligiile households that were nonwhite, as well as those with no earner present, were more likely to begin participating in the FSP in a given month-and if they were participating they were less likely to leave the program--than were otherwise comparable households.

- Events related to labor-market participation (such as a job loss or gain, or a large change in household income) were fairly prevalent among the FSP-eligible population; and households that experienced one of these events were more likely to enter or exit the FSP than were households that did not.

- Changes in household composition were much less common than labor-market events, but they also tended to be associated with transitions in FSP participation status.

c. Factors in the Participation Decision

Of the studies reviewed by Allin and Beebout, one (Fraker and Moffitt, 1988) modeled the household participation decision explicitly. To simplify the model, however, the analysis was limited to a subset of the FSP-eligible population-female-headed households who were also eligible for basic AFDC benefits. The findings of this study included the following:

- The wage rate, net of taxes, that a household head received seemed to play a significant role in the participation decision. Eligiile households in which the head received a relatively high wage were found to be less likely to participate in the FSP than were those whose head received a lower wage.

- In contrast, the benefit reduction rate, or the rate at which participants' benefits are reduced for each additional dollar of earned income, did not seem to be a sign&ant factor in the participation decision.

In addition, the results of this study confirmed the findings from the other studies examined, discussed above.

D. CONCLUSIONS: THE NEED FOR FUTURE RESEARCH

Although much research has been undertaken on participation and nonparticipation in the FSP, the series Current Perspectives on Food Stamp Program Participation has pointed to several significant gaps that remain in our understanding of the topic. This section delineates those gaps and proposes several potentially fruitful avenues for future research.

1. Improved Measures of Participation Rates

As discussed earlier, substantial interest has been expressed in the extent to which the FSP is serving its target population. Of equal importance is how well the FSP is currently serving this population relative to previous time periods. That is, policymakers must know how- the participation rate is changing over time, so as to identify trends in the rate and help discern the effects of various economic and legislative changes on the rate of participation.

Until fairly recently, the data were not available to estimate a consistent time series of participation rates accurately. The data which were available were not designed to estimate the FSP-eligible population; consequently, estimates of the denominator of the participation rate--the number of program eligibles-were not as precise as one would like. As noted earlier, the most precise estimates of the eligiile population can be drawn on the basis of monthly SIPP data, which are available from 1984 on. In the future, as more recent SIPP data become available, it will be extremely valuable to periodically update studies that relied on 1984 SIPP data to estimate the number of eligibles and on administrative data to estimate the number of participants (for example, Doyle and Be&out, 1988; and Ross, 1988), so as to establish a consistent and accurate time series of FSP participation rates.

2. Factors Associated with Nonparticipation

A few nationally representative surveys have asked respondents why they have not participated in the FSP. The responses to these questions have been fairly consistent. Respondents from the households that have been estimated to be eligiile for the program have tended to respond that did not need the stamps, that they were unaware of their eligibility, or that the costs associated with their participation outweighed the potential benefits. However, these findings are too general to offer much guidance for efforts to facilitate participation in the program. They do not explain why the respondents believed they did not need the assistance, why they thought that they were ineligible, or why they felt that the costs of applying for and using food stamps outweighed the benefits. The answers to these questions would offer more specific guidance in planning changes to the operation, structure, and outreach efforts of the program that might encourage greater participation among those eligiile for benefits. Further exploration of the motivations and constraints that prompt eligiile households to decide not to participate may necessitate data collection efforts other than national household surveys (for example, in-depth, focused discussions with groups of nonparticipating eligible individuals).

3. Factors Associated with Participation

In making judgments about the relative merits of alternative proposals for modifying the FSP, policymakers require up-to-date information on the factors associated with participation in the program. The extensive research on this topic offers policymakers little help in this regard, since most of the studies were based on data collected before the Food Stamp Act of 1977 was implemented fully. To confirm whether these effects are indeed still applicable to today's population of FSP eligibles, researchers may want to take advantage of the detailed information

on household income, assets, and expenses in SIPP, which supports a much better approximation of FSP eligibility than has been possible with other data sources.

4. Factors Associated with Entry and Exit

Again, up-todate studies on the factors associated with participation in the FSP would be very valuable. From these studies, one could ascertain whether certain subgroups of the eligible population are significantly more or less likely to participate in the program. Of at least equal value, however, would be studies that examine participation behavior over time, since they could provide information on the specific events that induce households to enter or exit the FSP. For example, an understanding of these events might inform policy efforts to facilitate access to the program while minimizing long-term dependence. A few studies have attempted to identity changes within the household that lead to changes in FSP participation status, but they have been less conclusive than one would hope because they have been based on the very limited number of households that have experienced a given event and because the rigor of their methodologies has been somewhat limited. Thus, more extensive research on the relationship between household changes and changes in FSP participation status is warranted.

Future research based on the dynamic approach should attempt to gain more insight into the household decision-making processes involved in moving into and out of the FSP, and should examine a larger number of households or use longer observation periods than did the earlier ISDP- and SIPP-based studies. Although the existing literature is illuminating, improvements in both the data and the techniques that are used would yield more concrete results. In particular, a model that accounted for other relevant household decisions would provide much more specific information on the FSP participation decision than is now available.

5. Modeling the Participation Decision

The vast majority of studies on participation in the FSP have examined the decision to participate in the FSP in isolation-that is, they have assumed implicitly that the FSP participation decision is made independently of other household decisions. In fact, it is more reasonable to expect that households make their decisions to participate in the FSP in conjunction with a variety of other relevant decisions, such as other program participation decisions and the decision to work By accounting for the possible interdependence among household decisions, this type of analysis could provide more precise estimates of the effects of different factors on the decision about whether to participate in the FSP.

Of the studies reviewed in Allin and Beebout, only one (Fraker and Moffitt, 1988) accounted for the interactions among decisions by estimating an explicit model of household decision-making behavior, and that study was restricted to a particular subset of all FSP-eligible households in or&r to make the number of decisions being modeled manageable. This approach is at the forefront of estimation techniques, and the modeling effort necessary to extend the results to the entire FSP-eligible population would be much more complex, difficult, and expensive. For example, the modeling would have to include a large number of different program participation decisions, and would have to account for a much greater variety of interactions among those decisions.

Whether conducted at this scale or not, more behavioral research must be undertaken on this topic. Theoretical work in developing more detailed models of the decision of the household to participate would be very useful, as would applied work in estimating these models, even if limited to portions of the FSP-eligible population. In the future, incorporating a dynamic element into these decision models would be extremely valuable, although the econometric sophistication

of the required modeling is not yet feasible. SIPP is again the logical data source for these future efforts.

6. Summary

Many studies have sought to estimate the level of participation and to identify the causes of nonparticipation in the Food Stamp Program, and their results provide reasonably consistent evidence on the factors associated with a high or low probability of participation, as well. as on the groups in the FSP-eligible population who are likely to exhiiit relatively high or low entry or exit rates. We know very little, however, about the actual behavior of households in deciding whether to participate in the program. Consequently, the literature in general offers only very tentative guidance to those interested in identifying ways to influence participation behavior among eligible households. For example, while we know that eligible households headed by an elderly person tend to have lower participation rates than do otherwise similar eligible households, the literature reviewed herein offers no guidance about how increased participation should be encouraged within this group, if so desired, because it does not explain exactly why these households are not participating. The task for future research is to identify the motivations behind the behavior of eligible nonparticipants.

III. THE DYNAMICS OF FOOD STAMP PROGRAM PARTICIPATION

Nancy Burstein and Mary Visher

A. INTRODUCTION

The evolution of welfare policy in recent years has increasingly cast assistance programs in a short-term, remedial role. Certain events--such as family breakups, the loss of employment, and perhaps intergenerational poverty--leave persons in severe economic need. For such persons, assistance programs are intended primarily to help sustain them until their families can become financially self-sufficient, and to offer incentives and services to help them make the transition to independence as quickly and as permanently as possible. For others, however, the need for assistance may have been triggered by an event whose consequences in terms of program dependence are more long-term in nature--for example, the sudden onset of a disability, or the lack of sufficient savings at retirement.

In forming policies to help individuals achieve economic self-sufficiency, it is essential that we understand the dynamics of participation in assistance programs. 'What events actually precipitate the need to apply for assistance? How long do individuals usually receive assistance? What events take them off the assistance rolls? Do they stay off, or do they return to the rolls quickly?

Recent studies have revealed much useful information about the dynamics of participation in the Aid to Families with Dependent Children (AFDC) program, yet similarly useful information about the Food Stamp Program (FSP) has been scarce. Because the FSP serves a much broader population than does AFDC, it cannot be assumed that the participation dynamics of the two programs are similar. In fact, the results presented herein demonstrate significant differences in the participation patterns of the two populations.

This paper presents information on the dynamics of the FSP caseload based on an analysis of two data bases. We examine the short-run dynamics of FSP participation with monthly data from administrative records originally collected to evaluate the effects of legislative changes to the FSP in the early 1980s. We examine the long-run dynamics of FSP participation over an eleven-year period (1973-1984) using annual data from the Panel Study of Income Dynamics (PSID). The following research questions are addressed specifically in the paper:

- What are the circumstances that prompt individuals to become food stamp recipients?
- What are the circumstances that prompt recipients to leave the program?
- How long do individuals tend to receive food stamps?
- What factors affect the patterns of participation?
- What groups are most likely to return to the Food Stamp Program?

In the sections that follow, we discuss the background to our research; the data used and some methodological issues; the findings pertaining to the five research questions; and our conclusions. (Further details may be found in Burstein and Visher, 1989.)

B. BACKGROUND

Over a dozen studies of the dynamics of participation in the FSP have been undertaken in the past decade, relying collectively on a wide variety of data sources and analytical methodologies. Rather than discuss the findings and limitations of each of these studies here, we merely highlight their implications for the research in this paper.

1. The Circumstances That Promnt Individuals To Become Food Stamp Recipients

The literature has consistently found that participation in other welfare programs, especially AFDC, is a strong predictor of an individual's beginning a food stamp spell (Coe, 1979; Kirlin and Merrill, 1985, Carr, Doyle, and Lubitz, 1984; and Merck, 1980). The lack of earnings in the household and the unemployment of the head of household are also significant factors (Coe, 1979; and Kirlin and Merrill, 1985). Several authors, using a dynamic "trigger event" approach, have found that changes in income or labor-force status and increases in family size have positive impacts on the likelihood of becoming a food stamp recipient (Coe, 1979; and Lubitz and Carr, 1985).

2. Duration of Receipt

The general consensus in the literature is that any given stay in the FSP tends to be short, less than a year or two. The turnover rate (the ratio of annual to monthly participation) appears to be in the range of 1.4 to 1.7 (Springs, 1977; Merck, 1980; and Carr, Doyle, and Lubitz, 1984). The estimated durations of spells have ranged from less than 6 months for non-AFDC households with earnings to around 3 years for elderly persons (Kirlin and Merrill, 1985; and Wolf, 1985).

3. Patterns of Recidivism

Some types of food stamp cases, including those who also receive AFDC and SSI benefits, have long spells that, once closed, tend not to reopen, while others have short and/or frequent spells (Kirlin and Merrill, 1985). Multiple spells, even within a single year, are a common occurrence (Carr, Doyle, and Lubitz, 1984).

4. The Circumstances That Prompt Individuals To Exit from the FSP

Although the eligibility of an AFDC household for food stamps does not necessarily end when its eligibility for AFDC ends, the concurrence of these events has frequently been observed (Coe, 1979; Kirlin, 1982; and Carr, Doyle, and Lubitz, 1984). Income increases, marriage, and an initial spell of unemployment insurance are events that often trigger the end of food stamp receipt (Lubitz and Carr, 1985). The ends of food stamp spells have also been found to be concentrated at recertifications, when changes in circumstances are most likely to be reported to food stamp agencies (Kirlin, 1982, and Kirlin and Merrill, 1985).

C. THE DATA AND METHODOLOGICAL ISSUES

1. Data Sources

The analyses presented herein are based on two types of data. The first data base contains information extracted from the case records of 6,621 food stamp households located in 60 sites throughout the nation as part of an evaluation for FNS of the effects of legislative changes made in the early 1980s. The selected sites were distributed throughout 29 states, covering all 7 food stamp regions. The data cover a period of 39 months, from October 1980 through December 1983.

Our second data source, the Panel Study of Income Dynamics (PSID), is a nationally representative, longitudinal survey of households conducted by the Survey Research Center at the University of Michigan. The original 1968 PSID sample of 5,000 American families comprised approximately 2,000 low-income families drawn from the Census Bureau's Survey of Economic Opportunity (196667) and a fresh probability sample of approximately 3,000 additional household taken from the Survey Research Center's national sampling frame.

The research presented in this paper relied on an extract which consisted of 11 waves of data for the entire sample of 5,130 families present in 1973, expanded to 6,647 families by 1983 (the last year included in our analysis). Any food stamp spells already in progress in 1973 were not analyzed because they are left-censored" (see Section C.2), so that in essence we have analyzed food stamp behavior starting in 1974--the year in which the program was implemented nationwide.

The current study thus makes a twofold contribution to the literature on food stamp dynamics. First, we analyze monthly data collected from administrative records, such data are not subject to recall error, unlike the survey data that have been analyzed by other researchers. In addition, these case records describe the experience of a nationally representative sample of food stamp recipients over a period of three years, which makes the analysis more generalizable than the analyses of similar studies that have been based on data from a single office or state. Second, while the PSID has been used in a number of food stamp studies, investigators have previously examined only a few panels at a time. We have used this unique data source to determine the FSP entry and exit patterns of households over a 10-year period, and their circumstances while doing so.

Several drawbacks of these two complementary data sources, however, should be noted. First, unlike survey data, case records do not provide any information on nonrecipients. Thus, our first data source cannot shed any light on the decision to participate. Second, our administrative data do not contain detailed information on individuals. Thus, it is impossible to determine, for example, the ages of various members of the household and their relationship to the applicant--information which would be useful in modeling the behavior of the household. Third, these data represent a one-time data collection effort which ended over five years ago.

Likewise, the annual nature of the PSID data has several crucial implications for a long-term analysis. First, it dictates that we define a spell of food stamp receipt as a set of consecutive years in which a family or individual participates in the FSP for all or part of the time. Thus, a spell does not necessarily imply continuous receipt.

Second, a substantial degree of uncertainty surrounds the timing of events within the year, and thus the paths of causation. For example, identifying a divorce that occurred in one year as the reason that a family began to receive food stamps in that year would depend on whether the divorce occurred before or after the first month of the food stamp spell. Such information is not available.

2. Methodology

Among the methodological issues that have arisen in our research are the treatment of left- and right-censored spells, and the definition of a household over time. We discuss each of these issues in this section.

a. Left- and Right-Censored Spells

The ideal data set for analyzing the dynamics of participation would encompass the entire duration of benefit receipt by each member of a cohort of cases. Nearly all available data differ from this ideal in two ways. Fiit, they contain spells which are left-censored--that is, which commenced before data collection began Second, they contain spells which are right-censored-that is, which were still ongoing at the end of the observation period

There is no generally accepted method for analyzing left-censored spells. As have other researchers, we have thus dropped them from our analysis. To analyze data which include right-censored spells, we have adopted the standard approach, which is to use a techniclue known as

"hazard rate" or "survival" analysis to calculate distributions of the completed durations of spells. Calculating the mean of the distribution then necessitates making some assumption about the closing rates for cases that are open for a very long period of time (e.g., that they equal a constant monthly or yearly value).

b. Defining a Longitudinal Family

Tracking a family over time is not a straightforward task The essential problem is determining appropriate rules defining a successor family-that is, the portion of a family that is the "same family" as the one before the occurrence of a change, such as a divorce. This problem, while existing in principle even over the course of a few months, is especially serious for a data set that covers several years, such as the PSID. Only 13 percent of the original PSID families interviewed in 1968 had not undergone a change in composition by 1982.

If a fraction of a family continues to receive food stamps, determining the length of the food stamp spell for that family will depend on the set of rules that identify the successor family. According to the PSID definition, whichever group remains with the head (who by definition is male) is the successor family. We have developed an alternative definition of a longitudinal family based on following the majority of members, and have reorganized the data to conform to this definition. While special rules were still necessary to cover cases of even splits, our approach substantially reduced the sexual bias and arbitrariness inherent in the PSID approach.

D. THE CIRCUMSTANCES THAT SURROUND THE BEGINNINGS OF FOOD STAMP SPELLS

Rather than examine the characteristics of households at the time they begin a spell of food stamps, we have taken a dynamic approach. Events that are likely to prompt a household to seek assistance to cover their food expenses include the following:

- A reduction in the number of adults in the household which alters the identity or marital status of the head of household through divorce, separation, or death
- The formation of a new ("split-off") household
- A reduction in the number of adults, other than the head and spouse
- A reduction of $500 or more (in 1978 dollars) in the combined taxable income of a household
- An increase in family size, through births or because children or adults move into the household

Following Bane and Ellwood (1983), we deemed that changes in household composition are potential trigger events if they occur either in the year that food stamp receipt began or in the year preceding food stamp receipt. We measured income changes by comparing income for the year in which food stamp receipt began with income during the preceding year. We made the potential trigger events mutually exclusive by defining them hierarchically.

We found that changes in household composition of various types were associated with nearly half of all spell beginnings. The departure of the spouse or head through death or divorce, and the formation of a new split-off household, each occurred in about 15 percent of new spells, while the loss of an adult other than the head, or an increase in household size, each occurred in nearly 10 percent of new spells. In addition, 31 percent of households beginning a spell of food stamp receipt had just experienced a substantive reduction in earnings or other taxable income, independent of any change in the adult composition of the household.

We found significant variations in the distribution of trigger events according to whether a spell of unearned income began at the same time that food stamp receipt began, For the 12

percent of food stamp openings that are synchronous with beginning spells of AFDC, changes in the identity or marital status of the household occurred 37 percent of the time, versus only 16 percent of the time for food stamp openings in general. Although split-offs and other net reductions in the number of adults present are relatively less common among concurrent AFDC/food stamp openings than among other (non-AFDC) food stamp openings, we still find that changes in the adult composition of the household of all types occur in over half of AFDC/food stamp openings. Analyzing the AFDC program per se, Bane and Ellwood found that 45 percent of spell beginnings could be attributed to a wife becoming a female head, another 30 percent to an unmarried woman without a child becoming a female head with a child, and another 12 percent to a reduction in a female head's earnings.

In contrast, food stamp openings that are synchronous with the beginnings of spells of other (non-AFDC) welfare or Social Security are relatively more likely to be triggered by a reduction in taxable income. Reductions in the number of adults present occur in just over 25 percent of these openings.

These trigger events are all far less common among low-inwme households that do not begin food stamp spells. We have roughly defined potential food stamp recipients as households whose annual income is below 400 percent of the poverty line. Most food stamp households fall in this subpopulation; the remainder have very high income in the months of the year when they are not recipients. We found that less than a fifth of nonrecipient households whose income is below 400 percent of the poverty line experienced a reduction in the number of adults or were newly formed in the current or preceding year (compared with 40 percent of households beginning a food stamp spell and 51 percent of households beginning both an AFDC and a food stamp spell). Similarly, less than 20 percent experienced a substantial reduction in earnings (compared

with 31 percent of households beginning a food stamp spell and 46 percent of households beginning both a food stamp spell and another unearned income spell, such as Social Security or GA). In total, 80 percent of all households beginning a spell of food stamps, but only 45 percent of poorer households not beginning a spell of food stamps, experienced one of the five trigger events.

E. THE CIRCUMSTANCES THAT PROMPT INDIVIDUALS TO EXIT THE FSP

Trigger events for case closings were defined conversely to those for case openings--that is, marriage, other increases in the number of adults, increases in taxable income, and reductions in household size. We found that only a small number of food stamp spell endings-4.6 percent--can be associated with the marriage of the head of household. However, this percentage more than doubles for those households which leave AFDC and food stamps concurrently. That is, nearly one of ten households that end AFDC and food stamp spells simultaneously experience a marriage in the last year of AFDC and food stamp receipt. On the other hand, the marriage rate among households that continue to participate in the FSP is only 2.1 percent. We conclude that marriage is an important trigger event, especially for AFDC recipients. Bane and Ellwood found that 32 percent of AFDC closings occurred after a female head became a wife, 14 percent after a female head lost the eligibility of a child (for example, the youngest child turned age 18), and 32 percent after a female head increased her earnings.

Other net increases in the number of adults present actually occur in more households which continue to receive food stamps (7.5 percent) than in households which stop receiving food stamps (5.9 percent). Thus, it is unlikely that this is an important trigger event.

An increase in taxable income occurs without a concomitant increase in the number of adults present in over half of the households that end a food stamp spell-and for nearly two-

thirds of households that end an AFDC and a food stamp spell simultaneously--compared with only a third of the households that do not end a food stamp spell. Another 4 percent of food stamp closures are attributable to the death of the last household member-an event which, of course, cannot occur in a household that continues to receive food stamps. However, other net reductions in the size of the household are somewhat less common among households that stop receiving food stamps (5.8 percent) than among households that continue to receive benefits (7.8 percent).

To summarize, nearly three-quarters of the households that end a food stamp spell experienced one or more of the five potential trigger events, compared with half of the households that do not end a food stamp spell. For both ending and ongoing recipient households, increases in income are much more common than changes in household composition. The events that are substantially more frequent among closing cases than among ongoing cases are marriage, increases in earnings, and the death of the last household member.

F. LENGTHS OF SPELLS

Our findings on the length of continuous food stamp receipt are presented in Table 1. Almost half (48.5 percent) of all spells recorded in the administrative data base ended within six months, so that the median spell length is 7 months. About 20 percent of all spells last more than two years, and about 14 percent of all spells last more than three years. Because so many households participate for long periods, the average spell length is about 18 months.

The distribution of completed spell lengths varies somewhat among subgroups of food stamp recipients. The characteristics of each of these subgroups are defined as of the first month of

TABLE 1

DISTRIBUTION OF LENGTHS OF CONTINUOUS SPELLS OF FOOD STAMP RECEIPT BY TYPES OF HOUSEHOLDS: FREQUENCIES AND CUHULATIVE FREQUENCIES

Number of Months	All Cases Freq.	All Cases Cum. Freq.	AFDC Freq.	AFDC Cum. Frea.	Recipients Work Freq.	Registrants Freq.	Registrants Cum. Freq.	Earned Income Freq.	Elderly Singles Freq.	Elderly Singles Cum. Frea.	Elderly Singles Freq.	Elderly Singles Cum. Freq
1	7.6%	7.6%	2.4%	2.4%	7.9%	7.9%	8 9.4	8.6%	3.2%	3.2%	8.9%	8.9%
2	10.6	18.1	3.8	6.2	13.0	21.0	14.2	18.0	3.9	7.1	13.4	22.3
3	11.1	29.2	6.3	12.5				32.2	3.8	11.0	11.7	34.0
4	7.2	36.4	4.3	16.8	14.4	33.0	10.1	42.3	3.7	14.6	7.6	
5	4.7	41.0	4.5	21.3					2.0	16.6	4.1	41.6 45.7
6	7.4	48.5	7.7	29.0	8.14.7	47.7 55.9	5::	47.4 56.6	6.8	23.4	6.2	51.9
					4.2		4.3					
7			4.8	33.8	2.4	60.0 62.4	2.5	60.9	1.6	25.0	3.5	
8	3::	52.7 55.8	2.6	36.4					1.9	26.8	3.1	55.4 50.5
9	3.2		2.1	38.5	3.7			63.4	2.2	29.0	3.3	61.8
10	2.1	61.1 59.0	2.2	40.7	2.9	66.2 69.1	3.7	67.1 69.7	2.0	31.0	1.8	63.6
11	2.0		2.2	42.9	2.3		2.6		1.2	32.1	1.5	65.1
12	3.7	63.1 66.8	4.2	47.0	2.8	74.2 71.4	2.4 2.5	72.1 74.6	8.2	40.4	4.1	69.2
13-18	8.1	74.9	12.3	59.3	7.3	81.5	8.0	82.6	a.4	48.8	6.5	75.7
19-24	5.2	80.1	6.8	66.1	3.7	05.2	5.4	88.0	10.1	58.9	5.6	81.3
25-30	3.1	83.2	3.8	69.9	2.0	07.2	2.3	90.3	3.8	62.7	3.4	84.7
31-36	2.9	86.1	3.3	73.2	2.8	90.0	3.5	93.8	8.9	71.6	3.5	88.2
37+	13.9	100.0	26.8	100.0	10.0	100.0	6.2	100.0	28.4	100.0	11.8	100.0
Mean Length:	17.6		30.8		14.5		11.8		42.1		15.4	

food stamp receipt in the spell, with the exception of AFDC recipients. The characteristics of AFDC recipients are defined as of the first two months of food stamp receipt, to allow for the possibility that households which apply for both AFDC and food stamps do not begin to receive AFDC until a month later.

For AFDC recipients, the median food stamp spell length is 13 months; approximately one-third of their spells last over two years. The mean spell length is 31 months. AFDC recipients thus appear to receive food stamps for substantially longer periods than do other types of food stamp recipients.

In contrast, more than half of all spells for food stamp households that contain a work registrant end within five months. Only 14 percent last more than two years; the estimated mean length is 15 months.

As with food stamp households that contain a work registrant, households that contain one or more persons with earned income have almost a 50 percent chance of closing within six months. Only 11 percent of their spells last over two years; the estimated mean length is 12 months.

Approximately half of all spells of food stamp receipt for households which contain one or more elderly persons close within 18 months, a quarter continue for three years or more. The mean estimated spell length for households that contain an elderly person is 42 months.

Finally, more than half of all one-member food stamp cases close within six months of opening. Less than 20 percent are open for more than two years, and only 12 percent for more than three years. The estimated mean spell length for one-member food stamp households is 15 months. More detailed analyses of these cases indicated that the length of spell tends to increase with age for each race and sex (not shown in the table). Furthermore, in every age-race

subdivision, the median spell lengths for males are at least as long as those for females. The effects of race are mixed; no common pattern emerges across the age groups for either sex.

The distribution of the length of intermittent receipt of food stamps is shown in Table 2. As noted earlier, a spell of receipt in the PSID data refers to a series of consecutive calendar years in which food stamps were received for one or more months in each of those years.

As shown in Table 2, two-fifths of all spells end the same year in which they began, and an additional one-fifth last no more than two years. After the fourth year, spells end at a steady, slow rate, with approximately 11 percent of all spells still ongoing after ten years. The mean spell length is estimated to be 4.6 years. The differences among subgroups are as follows:

- Households that receive AFDC during the first year in which they receive food stamps tend to have much longer spells than average, with a mean length of 10.4 years. Only one in four spells ends after the first year; 25 percent of food stamp spells beginning with an AFDC spell last more than ten years, a figure that mirrors the finding of Ellwood (1986) for all AFDC spells, regardless of food stamp receipt.

- Households with earned income have the shortest mean spell length of the subgroups; they receive stamps for an average of only 3.7 years. Close to half (46 percent) of households with earned income leave the program after only one year, and over 90 percent leave by the tenth year.

- Households in which the head is elderly have relatively long spells; only about one-third leave the program after one year. About 20 percent of the spells last more than ten years-a greater percentage than for all subgroups except food stamp households that receive AFDC.

- Single-person households receive food stamps for an average of 3.8 years, and end spells at a rate that is about average for the entire population.

Work registrants cannot be identified in the PSID data.

TABLE 2

DISTRIBUTION OF LENGTHS OF IWTERNITTENT SPELLS OF FOOD STAMP RECEIPT BY TYPES OF HOUSEHOLDS: FREQUENCIES AND CUMULATIVE FREQUENCIES

Number of Years	All Households		Households Receiving AFDC		Households with Earned Income		Households with Elderly Head		Single-Person Households	
	Freq.	um.	Freq.	um.	req.	um.	req.	um.	req.	Cum.
1	41.8%	41.8%	25.W	25.9%	46.4%	46.4%	34.5%	34.5%	39.4%	39.4%
2	19.5	61.3	19.6	45.5	18.5	64.9	22.0	56.5	22.4	61.7
3	9.9	71.2	10.4	55.9	9.9	74.8	10.7	67.2	11.1	72.8
4	6.6	77.8	10.4	66.3	6.7	81.5	6.5	73.6	5.4	78.2
5	2.8	80.6	2.0	68.3	2.4	83.9	3.7	77.3	2.7	80.9
6	1.7	82.3	2.8	71.1	1.0	84.9	2.6	79.9	3.1	84.0
7	2.0	84.3	0.6	71.7	2.6	87.5	0.0	79.9	0.2	84.2
8	1.2	85.5	3.3	75.0	0.7	88.2	0.0	79.9	0.1	84.3
9	1.1	86.6	0.0	75.0	1.4	89.6	0.0	79.9	3.6	87.9
10	1.7	88.3	0.0	75.0	2.0	91.6	0.0	79.9	3.5	91.4
11+	11.7	100.0	25.0	100.0	8.4	100.0	20.1	100.0	8.6	100.0
Nean Length in Years	4.56		10.38		3.69		N/A		3.79	
Unweighted Number of Spells	2,981		759		2,322		349		553	

NOTE: Intermittent receipt refers to a series of consecutive calendar years, in each of which food stamps were received for one or more months.

Comparing these findings with the analogous results in Bane and Ellwood (1983) reveals both an important substantive insight and an important methodological insight. Fit, the distribution of lengths of spells for food stamp households that also receive AFDC is very similar to that found by Bane and Ellwood for all AFDC households, reinforcing the notion that AFDC recipients tend to have longer spells than do food stamp recipients in general. Second, despite the very close similarity in the estimated frequencies, the mean length of spell presented here for AFDC/food stamp cases (10.4 years) is more than twice as great as that calculated by Bane and Ellwood for AFDC recipients (4.7 years). The reason is the extreme sensitivity of the calculation to hazard rates beyond, say, the first five or six years of receipt, which are estimated on the basis of very small samples of households that received food stamps for that long. In these circumstances, the mean length of spell may be of limited use as a summary statistic.

G. DETERMINANTS OF LENGTH OF RECEIPT

We estimated multivariate models with both the OBRA and PSID data to determine how various factors influence the probability of a case closing in a given month, or of a household ceasing to receive food stamps in a given year. The explanatory variables that were used fall into the following categories:

- Household composition: number of adults, number of children, and the presence of young children
- Demographics of applicant: age, race, education, and sex
- Sources of income: earnings, AFDC, GA, Social Security, SSI, and unemployment compensation
- Site characteristics: urban/rural classification, geographic region, and county unemployment rate

We measured all of these characteristics as of the beginning of the spell of receipt. The number of months or years in which a case has been active was included in the models as a measure of the duration of dependence. In addition, pre/post indicators were included to capture the net effects of two major changes in the FSP: the Omnibus Budget Reconciliation Act (OBRA) legislation, which went into effect in October 1981, and which is taken into account in the models based on the administrative data; and the elimination of the purchase requirement (EPR), which went into effect in 1979, and is taken into account in the models based on the PSID data.

The expected directions of the impacts of the included variables were based on our understanding of the volatility of cases. In general, we expected that households which contained a greater number of potential earners would be more volatile, and hence more likely to close in a given month, while households that contained a greater number of dependent children would be less likely to close. The applicant's demographics would be related to the probability of finding employment or remarrying. The receipt of public assistance was expected to reduce the probability of a closure, indicating a greater level of dependency. Higher closure rates were naturally expected in sites that exhibited lower unemployment rates.

We estimated separate models with each data base for four types of households according to whether they contained multiple adults or whether they contained children-that is, (1) single adults without children, (2) multiple adults without children, (3) single adults with children, and (4) multiple adults with children. Although the coefficient values vary among the four types of households, as do, to some extent, the presence and statistical significance of various factors, a number of common themes run throughout the closure models. In the administrative data, we found that:

- Cases headed by younger applicants are more prone to close than are cases headed by older applicants. Those headed by applicants younger than age

30 are several percentage points more likely to close per month, and those headed by elderly persons are several percentage points less likely to close per month, than those headed by applicants ages 30 to 59.

- Cases headed by blacks are less prone to close than are cases headed by whites, by about 3 percentage points.

- Cases that receive cash assistance in addition to food stamps are substantially less likely to close in a given month. This income source may be AFDC for households with children, or Social Security or SSI for households without children.

- Cases are substantially more likely to close in months that correspond to lengths of certification periods-for example, 3, 6, and 12 months after openings-and in the first 12 months of activity in general.

Some notable variations among the four household types are:

- On average, closure rates are lowest for one-parent households with children (6.1 percent per month) and about equal for the other three types (8.7 to 9.0 percent per month).

- For those households with children, having more children is associated with a lower probability of closure.

- The presence of earnings has a small positive effect for single-parent households only.

In the PSID data as well, the direction and significance of effects of virtually all of the covariates were generally similar among the four closure models. In particular, we found that:

- For households that contain children, having more children reduces the closure rate.

- For three of the four groups, cases headed by whites have significantly lower closure rates than do cases headed by nonwhites.

- Except for one-adult households, neither the sex nor the age of the head of household has any significant effect.

- In two of the four groups, cases headed by high school graduates have higher closure rates than cases headed by high school dropouts.

- The receipt of AFDC, Social Security, and other welfare have significant negative effects on closure rates, while the presence of earnings has a significant positive effect on three of the four groups.

- The unemployment rate in the county of residence has a significant negative effect on the two types of households without children.

- Closure rates were significantly lower after the EPR for all four household types.

- Closure rates are highest in the earlier years of a spell and lowest in the later years.

On the surface, it may seem surprising that the economic variables-the presence of earnings and the unemployment rate-have such weak effects in the administrative data models. While a new job or an increase in earnings is certainly an important reason for closure, it does not follow that cases with earnings at the time of a spell beginning are likely to close substantially sooner on average than are other cases. Many cases apply for food stamps due to a recent job loss; hence, employment status at the beginning of a spell is not necessarily a reliable measure of potential for employment.

Furthermore, cases that have no income-neither earned nor unearned-tend to be even more volatile than cases with earnings. These cases are in transition, and can be expected to find some other means of support shortly, either through employment or through the receipt of some form of public assistance. In a subpopulation that is largely not on public assistance (e.g., two-adult families with children), the presence of earnings in the initial month of food stamp receipt need not thus be strongly positively associated with the closure rate over the course of the spell, and may even be negatively associated with it.

Similarly, the fact that the unemployment rate is measured at the beginning of the spell may help explain its lack of importance in all the models except the model for single adults.

While estimating the models as functions of current rather than initial circumstances would no doubt have led to stronger relationships between closures and economic variables, that approach would have been useless for predicting lengths of spells at the time of entry into the FSP.

H. RECIDMSM AND TOTAL TIME RECEIVING FOOD STAMPS

Many of the same factors that influence the probability of a case's closing are expected to influence in the opposite direction the probability of its reopening, since these factors measure the degree of dependence on the FSP. The relationships could be attenuated, however, because with the passage of time the characteristics in the first month of receipt of the preceding spell become less accurate descriptors of the current circumstances. Nonetheless, we have estimated the reopening models on the basis of these measures to enable us to predict long-term activity rates conditional on the characteristics of a case when it is first observed beginning a spell of food stamp receipt.

We have explored patterns of reopening only with the administrative data. The lack of detailed monthly information in the PSID argued against attempting that analysis here. Among the findings that emerged from the estimated reopening models are the following:

- Reopenings are significantly less likely for households without children headed by elderly individuals. Although these households have very low closure rates, such closures are likely to be permanent, possibly because they are more likely to be associated with death or institutionalization.

- For both household types with children, reopenings are significantly more likely in areas with high unemployment rates.

- Reopenings are markedly concentrated in the early months after closure. If a case does not reopen within a few months, it is much less likely to reopen at all.

- For all but single-parent households, reopening rates are significantly lower for spells that began after the OBRA legislation went into effect. These

rates could reflect changes in the eligibility limit for benefit receipt or the concurrent economic recovery in the final year of the observation period.

The probability of reopening within six months of closure for particular subgroups ranged from a low of 14 percent for elderly couples who were receiving Social Security to a high of 42 percent for single-parent households who were receiving GA with no earnings at the original spell beginning. (It should be noted that each of these subgroups represents only a tiny proportion of all food stamp spells.)

Combining the closure and reopening models, we then calculated the proportion of time over a five-year period during which cases that exhibited various characteristics could be expected to receive food stamps. We used a set of 17 subgroups identified by the type of household, sources of income, and in some cases the age of the household head. These subgroups are mutually exclusive, and account for over 90 percent of food stamp spells of receipt.

The findings, shown in Table 3, are as follows:

- The highest food stamp activity rates are seen among single-parent AFDC cases without earnings (58 percent), dual-parent AFDC cases with older heads (58 percent), and single elderly persons receiving SSI or Social Security (62 percent).
- Other groups with high activity rates are single-parent AFDC cases with earnings, single-parent GA cases, and childless elderly couples who receive Social Security (all 50 to 55 percent).
- The groups with the lowest activity rates are several types of non-AFDC cases: single parents, dual parents with a younger case head, single nonelderly individuals, and childless nonelderly couples (all 20 to 33 percent).
- The remaining groups show intermediate activity rates: dual-parent AFDC cases with a younger case head, dual-parent non-AFDC cases with an older case head, and single GA recipients (all 38 to 47 percent).

TABLE 3

ACTIVITY RATE OVER FIVE YEARS FOR SELECTED SUBGROUPS

	Proportion of All Spells[a]	Activity Rate Over 5 Years
Type 1: Single-Parent Households		
AFDC, no earnings	11.7%	57.7%
AFDC with earnings	1.4	54.7
GA, no earnings	1.5	51.2
NPA, no earnings[b]	8.2	33.3
NPA with earnings[b]	5.3	32.8
Type 2: Intact Families		
AFDC, case head under age 40	3.9%	47.0%
AFDC, case head over age 40	1.7	58.3
NPA, case head under age 40[b]	14.3	27.6
NPA, case head over age 40[b]	5.1	41.7
Type 3: Single Individuals		
SSI and/or Social Security, elderly	5.5%	61.6%
GA, under age 30	2.0	38.2
GA, ages 30-59	11.9	44.3
NPA, under age 30[b]		20.6
NPA, ages 30-59[b]	10.1	23.9
Type 4: Childless Couples		
Social-Security, elderly	1.0%	50.2%
NPA, under age 30[b]	2.6	19.9
NPA, ages 30-59[b]	3.6	32.6

"The proportion of all spells differs from the proportion of the food stamp caseload accounted for by each subgroup because it does not take into account the average length of spell. Thus, this column shows that AFDC cases comprise only 18 percent of spells. Because these spells tend to be long ones, AFDC recipients in fact comprise over 40 percent of cases at any point in time.

[b]NPA means non-public assistance.

It is clear that overall activity rates can reflect the effect of factors that work in opposite directions; for example, among intact families, non-AFDC cases with an older case head have a somewhat greater expected activity rate than do AFDC cases with a younger case head. Likewise, single-parent AFDC cases with earnings have a higher expected activity rate than do elderly couples who receive Social Security because their reopening rate is higher, despite the fact that the latter group have longer spells on average.

L CONCLUSIONS

A key result of these analyses is that over half of all continuous episodes of food stamp receipt end within 7 months. However, because some households receive food stamps continuously for several years, the average length of participation is 18 months. For AFDC recipients and the elderly, participation tends to last considerably longer; for work registrants, earned-income cases, and singles, program stays are shorter.

Intermittent contact with the FSP lasts longer. **Two-thirds** of spells in the PSID last one ortwoyears.

These numbers are in striking contrast with corresponding statistics for the AFDC program, which tend to show substantially longer periods of dependence. **Ruggles** (1988) found that half of all continuous episodes of AFDC receipt end within 11 months, compared with the **7-month** median reported here for the FSP. Likewise, Bane and Ellwood **(1983)** found that less than half of AFDC recipients ended intermittent contact with the AFDC program within two years. Thus, long-term dependence is less prevalent in the FSP than in the AFDC program.

Some important factors that influence the length of participation are the presence and number of children, the age and race of the household head, the presence of earnings, and especially participation in other income support programs. While the majority of food stamp

recipients appear to participate only for a single continuous period in a two-year time frame, one-third of all cases begin a second spell within two years after beginning a first spell. Finally, we note that, in sharp contrast with the pattern observed for AFDC, both spell beginnings and spell endings are relatively more likely to be triggered by changes in income than by changes in household composition or marital status.

The contrasting results between the AFDC and Food Stamp programs reflect the very different caseload composition of the two programs. The very factors that make some food stamp recipients categorically ineligible for AFDC--the absence of children or (in some states) the presence of both parents-may reduce barriers to economic independence.

IV. ASSESSING THE DIETARY EFFECTS OF THE FOOD STAMP PROGRAM

Barbara Devaney and Robert Moffitt

A. INTRODUC'ITON

The objective of the current Food Stamp Program (FSP) is to raise the nutritional level of low-income households by providing benefits that increase the food-purchasing power of participating households. The program design is based on the premise that benefits in the form of coupons would increase the food expenditures and nutrition of low-income households to a greater extent than would equivalent cash benefits. The reasoning behind this premise is that coupons, which can legally be used only to purchase food, provide an incentive for households to increase their food purchases, particularly those households that would have spent less than their coupon allotment on food in the absence of the FSP. However, the possibility has long been recognized that households may choose not to increase their food expenditures by the full amount of their coupons and, instead, may substitute the coupons for food expenditures that would have been financed otherwise by money income, thereby using FSP benefits to free up money for purchasing nonfood items. Thus, the FSP may function more as an income transfer program and less as a program linked to food consumption and nutrition.

The objective of this paper is to assess the dietary effects of the FSP.[8] Despite the existence of a large body of literature on the food expenditure and dietary effects of the FSP, it is useful to examine this topic further for several reasons. First, as discussed later, many of the more recent

[8]This paper is based on a two-volume report on the dietary effects of the FSP (Devaney, Haines, and Moffitt, 1989). The first volume of that report provides a conceptual framework for examining the effects of the FSP, and the second volume presents the empirical results that are contained in this paper.

analyses of this topic rely on models that yield biased estimates of the dietary effects of the FSP. Second, the issue of selection bias in dietary analyses of the FSP has seldom been addressed. Selection bias may occur because unobserved differences between FSP participants and eligible nonparticipants that cannot be captured by measurable variables (for example, a concern for a nutritious diet) may be related to the likelihood of participating in the FSP. Finally, the diversity of the existing literature in terms of the models developed and estimated, the data sets used, the outcome variables analyzed, and even the background of the researchers who have analyzed this topic have generated a similarly diverse set of empirical Endings. Assessing the dietary effects of the FSP necessitates developing both a theoretical framework for analyzing the effects of the FSP and an empirical model that is consistent with the theoretical framework.

This paper is organized as follows. Section B offers a model of the dietary effects of the FSP, and Section C describes the data used in the analysis. Section D presents the results of an effort to estimate both a basic model of the dietary effects of the FSP and a model that accounts for selection bias. The concluding Section E offers a summary of the issues discussed in the paper.

B. THE MODEL

The most important question to be addressed in an analysis of the dietary effects of the FSP is the extent to which the program raises the quality of the diets of participating households.[9] Specifically, we are interested in comparing the dietary quality of a household that receives food stamps with the dietary quality of the same household if the FSP were not available. In addition to these total effects of the FSP, a related question is the marginal effect of food stamp benefits

[9]The discussion here presumes that one overall measure of the dietary quality of households is available, although a variety of dietary outcome measures have been used in previous analyses of the FSP. (See the report by Devaney, Haines, and Moffitt, 1989, for a discussion of dietary outcome measures.)

on dietary quality. That is, what are the dietary effects of an additional dollar of benefits, and do coupon benefits affect dietary quality to a greater extent than do equivalent cash benefits?

The model of the dietary effects of the FSP is based on the Engel function, which relates the level of consumption of a good to the level of income. The Engel function is typically used in analyses of food expenditures based on cross-sectional data, and is derived from the theory of consumer demand. Engel himself is famous in economics for having been the first to analyze the relationship between food expenditures and income and thus for formulating Engel's Law: the proportion of income spent on food falls as income rises. In the context of the FSP, researchers have estimated the effects of both income and food stamp benefits on food expenditures. These estimates are usually presented as the marginal propensity to spend on food (MPC_f) out of money income or food stamps, and show the marginal impact of a dollar change in money income or food stamps on food expenditures.

The dietary effects of changes in money income and food stamp benefits can also be examined using the Engel function. When the consumer demand model is applied, the first issue that arises is the exact specification of the utility function-that is, what is it that individuals and households actually choose? For a study of the dietary effects of the FSP, it may appear to be best to take a direct approach and assume that levels of nutrients could be obtained directly from utility maximization. However, this approach does not seem to be a realistic assumption about household and individual preferences; after all, households cannot consume nutrients directly (aside from vitamin pills), but must instead consume them indirectly through the consumption of specific food items. It could be assumed that nutrients appear in the utility function, but that households have available only the "bundles" of nutrients available in specific foods; they would then choose foods so as to acquire the most preferred combination of nutrients. But putting food items into the utility function directly is virtually equivalent to such an approach and, in addition,

is compatible with food preferences being derived from factors other than the demand for nutrients (for example, taste, sight, smell, and advertising).

1. Theoretical Model

Giien this preliminary discussion, assume that the household chooses from J foods--Q_j, $j = 1, \ldots,$ J--and a composite nonfood good, C. Maximizing utility subject to the constraint on household resources leads to J different demand functions for the food goods, which can be written in the form:

$$(1) \quad Q_j = f_j(P_1, P_j, \ldots, P_J, Y, B), \; j = 1, \ldots, J,$$

where Y is total cash income, excluding food stamp benefits, B is the food stamp benefit level, and P_j is the price of food good j relative to the price of C, with the latter representing the general price level. Cash income and food stamp benefits are entered separately into the demand functions to allow for different effects of changes in cash income and food stamp benefit levels on food consumption.

How do nutrients fit into this model? Assume that there are K nutrients--N,, k = l , . . . , K-and that each unit of food good, Q,, yields a_{kj} of nutrient N_k. The K nutrient equations can thus be written as follows:

$$(2) \quad N_k = \sum_{j=1}^{J} a_{kj} Q_j, \; k = 1, \ldots, K.$$

Equations (1) and (2) constitute the assumed "true" model of the determinants of nutrient levels. An increase in income or the food stamp benefit, for example, increases the quantity of each food good consumed (Q_j), though some may fall if they are inferior goods. Each increased

food good raises the availability of each nutrient in household diets, the amount depending on the magnitudes of the a_{kj}'s.

2 Econometric Estimation

The usual approach to estimating the model depicted by equations (1) and (2) is to focus on the food-good demand functions, (1). Most commonly, these individual food-good equations are aggregated to a total food-expenditure equation by multiplying each food-good equation by its price and adding them up across goods. This is the Engel function for total food expenditures discussed above. However, an equation for total food expenditures precludes using equation (2) to determine the nutrients from food, because no exact relationship exists between an increase in total food expenditures and an increase in each of the nutrients; the relationship depends on the combination of the individual food groups that is embodied in the rise in food expenditures.

One other approach adopted in the literature for estimating the theoretical model has been to attempt to estimate relationships between the availability or intake of nutrients and the food expenditures of households. This model is essentially recursive, in which cash income and the food stamp benefit are assumed to affect household food expenditures, and household food expenditures influence nutrient levels. The effects of the FSP, for example, are then traced through their impacts on food expenditures, which in turn affect nutrient levels. However, this approach leads to model specification bias, since no fixed relationship exists between household food expenditures and each nutrient; that is, it is generally not possible to use (1) and (2) to derive equations in which nutrient availability appears on the left-hand side and total food expenditures appears on the right.

This specification bias could have serious consequences for estimating the effect of food stamps on nutrient levels. When the food stamp benefit is separated from other income and is

entered separately into food expenditure equations, the results of previous studies suggest that changes in FSP benefit levels have a stronger effect on food expenditures than do changes in the level of money income (Chen, 1983; and Brown, Johnson, and Rizek, 1982). Thus, it is likely that increases in food stamp benefits also have different effects on the consumption of individual food items than do increases in money income. In this case, the food expenditure coefficients in the nutrient equations will represent biased estimates of the effect of the food stamp benefit on nutrient levels, since those coefficients will represent only the average effects of increases in money income and in the food stamp benefit For example, if increases in the food stamp benefit prompt households to consume more nutritious goods than do increases in other income, the food expenditure coefficients in the nutrient equations will lead to downward biases in the effect of the food stamp benefit.

It should be noted that adding variables for income and for the food stamp benefit or FSP participation, or both, to the nutrient equations does not reduce the magnitude of the specification bias. In fact, the degree of bias probably increases in this case, since there is no reason for food expenditures to remain in the equation after income and FSP benefit variables are added directly.

3. Proposed Estimation Procedure

Given this extended discussion of the problems involved in estimating the nutrient equations with aggregate food expenditures as a substitute for the individual food items, the major issue is how the dietary effects of the FSP can be estimated. Since literally hundreds of individual food goods (Q_j) and thousands of a_{kj}'s exist, the data do not allow individual food consumption equations to be estimated directly. However, substituting the individual food-demand equations (1) into the nutrient equations (2) yields a set of reduced-form nutrient equations. In the reduced-form equations, nutrient levels are related to the food stamp benefit level, cash income, and other

variables that affect the demand for food goods. Recognizing that price levels are generally constant for cross-sectional data, we can expect to estimate for each nutrient k a linear regression equation of the form:

$$(3) \quad N_{ki} = \alpha_k + \beta_k Y_i + \delta_k B_i + X_i \phi_k + \varepsilon_{ki},$$

where "i" denotes household i, Y, is household cash income, B, is the food stamp benefit, X_i is a set of other variables thought to affect the demand for food goods and, hence, nutrient levels, and ε_{ki} is an error term. The coefficients β and δ in this equation represent the combined effects of (1) the effect of income and the food stamp benefit on the demand for food goods, and (2) the effect of food consumption on nutrient levels. The two effects cannot be separated out, but that is unnecessary for determining the effect of the FSP. The important point is that the coefficients correctly capture the effects of income and benefits on nutrient levels working through the hundreds of individual food goods, even though those individual food consumption levels are not used in the estimation.

In this most basic form, the model depicted by equation (3) is straightforward and simple to estimate using ordinary least squares (OLS) regression. Most commonly, cross-sectional data on household food use, such as those available from the Nationwide Food Consumption Survey (NFCS), are used to estimate the nutrient equations. These data and the results of estimating the set of equations depicted by (3) are discussed in the following section.

C. DATA AND THE EMPIRICAL, RESULTS

1. Data

The data used in this report are from the 1979430 Survey of Food Consumption in Low-Income Households (SFC-LI). This survey was administered from November 1979 through March

1980 to a national probability sample of approximately 2,900 low-income housekeeping households eligible to receive benefits under the FSP.[10] Detailed information on household food use was collected by the SFC-LI. Household food use refers to food and beverages used from household food supplies during the seven days preceding the interview. Food purchased with cash, credit, or food stamps and food that was home-produced, received as a gift or payment for work, or received through other food programs are all included in the measure of household food use. In addition to the data on food use, information was obtained on household characteristics presumed to be related to food use, such as participation in the FSP, participation in other food assistance programs (School Lunch, School Breakfast, and WIC), household consumption, income, the education and employment of the household heads, urbanization, and tenancy.

Data on household food energy and nutrient availability were calculated from the quantity of each food item used from household food supplies. The caloric and nutrient contents of each food item were obtained from tables of the nutritive value of foods. The total availability of food energy and nutrients to the household was derived by summing the food energy and nutritive values of the individual food items used. Nutritive values pertain to the ediile portion of the food used from household food supplies, with some adjustments for vitamin losses during preparation.

It is important to note that the data from the SFC-LI on the nutrient availability of the household are based on food used from household food supplies. Nutritive values were not available for food eaten away from home. If the number of meals eaten away from home differs among groups of households, differences in nutrient availability will be observed regardless of whether or not any differences exist in the nutritive value of food used at home. Therefore, it

[10]Housekeeping households are those in which at least one person has 10 or more meals from household food supplies during the 7 days preceding the interview.

is important to adjust for the proportion of meals eaten at home when nutrient availability from food used at home is compared among subgroups of low-income households. In addition, because food used generally exceeds food intake, nutrient availability overstates nutrient intake.

2. The Results

Table 1 shows the means of the major variables used in the empirical analysis. Eleven major nutrients are examined, and each is scaled by the number of equivalent nutrition units in the household. The number of equivalent nutrition units (ENUs) is one measure of household size and is defined as the number of adult male equivalents who eat meals from household food supplies. It adjusts actual household size for both the age-sex composition of family members and guests and the proportion of weekly meals eaten at home. The adjustment procedure weights each household by (1) the nutritional requirements of the member relative to the nutritional requirements of an adult male age 23 to SO, Where the nutritional requirements are based on the 1980 Recommended Dietary Allowances (RDAs) for each nutrient, and (2) the proportion of weekly meals eaten at home.[11] This second part of the weighting scheme is necessary for analyses of nutrient availability, since, as noted earlier, such nutrient data are based only on the food used at home. Thus, the ENU adjustment is required not only because the age-sex composition of each household differs, but also because only food used at home is measured.

The income variables shown in Table 1 are scaled by the number of adult male equivalents (AMEs), based on the 1980 RDA for food energy.[12] Cash income is about eight times larger than

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"Appendix C illustrates how equivalent nutrition units are calculated.

[12]AME, rather than ENU, is used to scale the independent variables in the analysis because household size in equivalent nutrition units may be an endogenous variable, since it depends on the proportion of meals eaten at home.

TABLE 1

MEANS OF THE VARIABLES USED IN THE ANALYSIS
(N = 2,925)

Variable	Mean Value
Nutrients per ENU[a]	
Food Energy (Kcal)	3,988
Protein (g)	129
Vitamin A (IU)	11,414
Vitamin C (mg)	139
Thiamin (mg)	2.71
Riboflavin (mg)	3.23
Vitamin B_6 (mg)	2.56
Calcium (mg)	1,000
Phosporous (mg)	1,710
Magnesium (mg)	464
Iron (mg)	16.9
Income per AME[b] ($)	
Cash Income	$47.23
Food Stamp Benefit'	5.42
Food Stamp Benefit - Participants Only	10.84
Subsidy Value of School Lunches	1.25
Subsidy Value of School Breakfasts	.17
Value of Home-Grown Food	.53
Value of Gift/Pay Food	.88
Household Characteristics	
FSP Participation Rate	.50
AME (food energy)	2.63
Female Head	.94
Guest Meal per AME	.75
North Central	.I4
South	.67
West	.08
Spanish	.07
Suburban	.15
Nonmetropolitan	.37
Head of Household <35	.33
Head of Household 35-59	.35
Head of Household 60+	.32
Black	.49

SOURCE: 1979-80 Survey of Food Consumption in Low-Income Households.

[a]ENU is equivalent nutrition units, which is the number of adult male equivalents who eat food from household food supplies.

[b]AME is the number of adult male equivalents in the household.

'Includes zeros for nonparticipants.

the average FSP benefit overall. However, the average food stamp benefit per AME for participants is only $10.84, which is roughly 28 percent of cash income for participating households (not shown).

The other variables shown in Table 1 indicate that, on average, $2.83 per adult male equivalent was from foods received either through the school nutrition programs, as gift or pay, or from home-grown food. The low-income sample was divided about evenly between FSP participants and nonparticipants, between blacks and non-blacks, and by the age of the household head (younger than 35, 35 to 59, and 60 and older). In addition, the average household size was 263 adult male equivalents, the vast majority of the households contained a female head (94 percent),[13] and the sample was located largely in the South and in rural or nonmetropolitan areas.

Table 2 shows the OLS estimates for each nutrient equation. The findings show that the availability of all nutrients to the household is positively associated with both the food stamp benefit level and money income. The most striking result shown in the table is that the estimated marginal impacts of the food stamp benefit consistently and significantly exceed those of cash income. While the estimates indicate positive and statistically sign&ant effects on nutrient availability for both the food stamp benefit and cash income, the coefficient on the money income variable is always less than the coefficient on the food stamp benefit, indicating smaller marginal effects of money income on nutrient availability.

This point is examined in more detail in Table 3. The first two columns show the "MPCs (i.e., the marginal propensity to "consume" nutrients) for the food stamp benefit and for cash income. The cash income MPCs are evaluated at the mean of cash income, and thus represent

[13]"Female head present" refers either to households that are headed solely by a female or to households headed by both a male and a female.

TABLE 2

OLS ESTIMATES OF EQUATIONS FOR THE AVAILABILITY OF NUTRIENTS IN FOOD USED FROM HOME FOOD SUPPLIES: U.S. LOW-INCOME HOUSEHOLDS, 1979-1980

(Standard Errors in Parentheses, N = 2,925)

Explanatory Variables	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Vitamin B_6	Calcium	Phosphorus	Magnesium	Iron
Constant	2,951' (238)	104.79** (7.17)	7,640** (1,230)	110.85* (13.45)	1.890** (.166)	2.579** (.194)	2.355** (.155)	907** (73)	1,518** (104)	407.7** (27.9)	13.168** (1.093)
Household Weekly Food Stamp Benefit Per Adult Bale Equivalent	52** (6)	1.81** (.18)	156** (31)	1.97** (.41)	.040** (.004)	.052** (.005)	.039** (.004)	18** (2)	30** (3)	7.1** (.7)	.387** (.044)
Household Weekly Money Income Dar Adult Male Equivalent[a]	16** (4)	.59** (.11)	39** (20)	.90** (.25)	.010** (.0025)	.012** (.003)	.011** (.002)	6** (1)	11** (2)	2.1** (.4)	.161** (.026)
Huusrhold Incw Per Adult Male Equkalent Squared[a]	-.06** (.02)	-.003** (.001)	-.17 (.13)	-.004* (.002)	-.00004** (.000015)	-.00005** (.00002)	-.00006** (.00002)	-.03* (.01)	-.06* (.02)	-.009** (.003)	-.0008** (.0002)
Weekly Subsidy Value of School Lunches per Adult Male Equivalent[a]	64* (27)	3.75** (.72)	78 (129)	6.71** (1.52)	.073** (.019)	.060** (.022)	.102** (.017)	7 (11)	20 (16)	9.7** (3.1)	.570** (.206)
Weekly Subsidy Valua of School Breakfasts Dar Adult Male Equivalent[a]	122 (77)	3.37 (2.10)	292 (372)	3.42 (4.62)	.078 (.053)	.080 (.063)	.075 (.049)	61 (32)	109* (45)	12.6 (6.9)	.467 (.626)
Weakly Value of Home-Grown pod Per adult Male Equivalent	195** (21)	6.59** (.69)	1,105** (119)	8.87** (1.45)	.122** (.015)	.152** (.018)	.128** (.016)	70** (8)	139** (12)	26.4** (2.6)	1.399** (.145)
Weekly Value of Gift/Pay Food Far Adult Male Equlvalanta	83** (15)	3.23** (.48)	343** (83)	5.53** (1.05)	.056** (.011)	.070** (.013)	.076** (.01)	30** (6)	49** (9)	10.6** (2.0)	.557** (.108)
Female Head Present	-59 (134)	-2.31 (4.01)	2,124** (680)	11.55 (7.21)	-.018 (.093)	.054 (.108)	-.138 (.085)	-160** (39)	-279** (56)	-16.2 (15.5)	-4.195** (.621)
Black	-41 (74)	5.26' (2.20)	3,763** (373)	24.53** (3.94)	-.019 (.051)	-.196** (.059)	.103* (.047)	-167** (21)	-143** (31)	-47.P (6.5)	.776* (.335)
Number of Adult-Male-Equivalent Parsons In Household[a]	-140** (26)	-4.13** (.81)	-938** (135)	-9.98** (1.24)	-.073** (.018)	-.090** (.021)	-.090** (.017)	-15** (5)	-37** (8)	-13.4** (2.9)	-.403** (.060)
Number of Guest Meals par Adult Bale Equivalent[a]	29 (16)	1.55** (.48)	147 (63)	1.66 (1.04)	.013 (.011)	.026* (.013)	.023* (.011)	9 (6)	30** (9)	4.4* (2.0)	.354** (.112)
Worth Central	-23 (134)	-7.49 (4.01)	-1,069 (681)	-16.W (7.20)	.088 (.094)	-.042 (.108)	-.194* (.085)	-21 (39)	-67 (56)	-19.0 (15.5)	.960 (.613)
South	366** (113)	-7.30** (3.38)	-1,182* (574)	-16.70** (6.07)	.324** (.079)	.049 (.091)	-.168* (.072)	63 (33)	136** (47)	-7.9 (13.1)	1.767** (.515)
West	-60 (148)	-6.54 (4.43)	-620 (752)	-3.23 (7.95)	.099 (.103)	-.080 (.120)	-.130 (.094)	35 (43)	8 (62)	15.2 (17.2)	1.069 (.677)

TABLE 2 (continued)

Explanatory Variables	Food Energy	Protein	Vitamin A	Vitamin C	Tblamln	Riboflavin	Vitamin B_6	Calcium	Phosphorus	Magnesium	Iron
Spanish	581** (132)	17.27** (3.95)	1,417* (676)	37.00** (7.08)	.473** (.092)	.365** (.106)	.354** (.084)	39 (38)	111* (55)	19.6 (15.3)	2.696" (.603)
Suburban	-164 (96)	-4.45 (2.86)	-1,194* (465)	-15.34~ (5.12)	-.151* (.067)	-.112 (.077)	-.132* (.061)	-49 (28)	-61' (40)	-22.1' (11.1)	-1.145** (.437)
Nonaetropolltan	33 (76)	-3.56 (2.26)	-1,848** (367)	-19.w (4.09)	.019 (.053)	-.041 (.061)	-.118* (.049)	35 (22)	31 (32)	.13 (8.83)	-.068 (.348)
Ned of Household 1s 35 to 59 Years Old	179* (78)	6.40** (2.35)	1,465** (399)	10.85** (4.16)	.126* (.054)	.110 (.063)	.007 (.050)	63** (23)	133** (33)	15.3 (9.1)	2.140** (.357)
Head of Nousetmld 1s 69 Years Old or Older	5 (92)	-8.55** (2.67)	1,496** (453)	5.86 (4.81)	-.O% (.063)	-.096 (.073)	-.268* (.057)	34 (26)	4 (38)	-23.9 (10.3)	2.230** (.446)
R^2	.12	.12	.13	.10	.09	.09	.12	.12	.16	.11.	25
Mean of Dependent Varlable	3,998 Kcal	126.57 g	11,414 IU	139.22 mg	2.715 mg	3.231 mg	2.569 mg	1,000 mg	1,710 mg	464 mg	17 mg

SOURCE: 1979-80 Survey of Food Consumption In Low-Income Households.

NOTE: The dependent variables are daily evallablllty per equivalent nutrition unit (number of adult male equivalents eating from home food supplies). Equivalent nutrition urlts are computed separately for each nutrient sod are based on tbe 1969 RDA.

[a]The numbers of adult male equivalents are computed separately for each nutrient and are based on the 1969 KM.

● (*) Significant at the .05(.01) level.

the average MPC in the sample. As shown in the table, the MPCs for the food stamp benefit are much greater than the cash income MPCs. The ratio of the MPC for the food stamp benefit to the cash income MPC is never less than 3 and is as high as 7. This difference is very large, and is discussed in more detail later in this section.

To provide some feel for whether the estimated dietary effects are large or small, the third and fourth columns of Table 3 show the marginal effects of the food stamp benefit and cash income as a percentage of the adult male RDA. That is, these figures show the changes in the availability of each nutrient to the household as a percentage of the RDA due to a dollar increase in the weekly food stamp benefit and money income. The percentage effects of changes in cash income are quite low, ranging from 3 to 1.2 percent of the adult male RDA, while the percentage effects of changes in the food stamp benefit range from 1.8 to 3.9 percent of the adult male RDA. Interestingly, the percentage effects of changes in the food stamp benefit are similar in magnitude for most nutrients. That is, nutrient availability increases from between 1.8 and 3.9 percent of the RDA for a one-dollar increase in the food stamp benefit. These findings imply that increases in the food stamp benefit are generally allocated proportionally among the nutrients examined.

Returning to Table 2, the results indicate that the subsidy value of school lunches and school breakfasts has a positive effect on nutrient availability, although the effect of school breakfasts is usually not statistically significant. The weekly value of homegrown and gift/pay food are also positively and significantly associated with nutrient availability, and in fact the estimated coefficients on these variables are significantly larger than the estimated coefficients on both the food stamp benefit and cash income variables. The number of AMEs in the household lowers the nutrient availability per ENU, presumably reflecting economies of scale in food use. Nutrient patterns vary

TABLE 3

MARGINAL PROPENSITIES TO CONSUME NUTRIENTS

	Absolute MPC		MPC as a Percentage of the Adult Male RDA	
	Food Stamp Benefit	Cash'	Food Stamp Benefit	Cash'
Food Energy (Kcal)	52.0	11.0	1.9%	.4%
Protein (g)	1.81	.36	3.2	.6
Vitamin A (IU)	156	25	3.1	.5
Vitamin C (mg)	1.97	.59	3.3	1.0
Thiamin (mg)	.040	.006	2.9	.4
Riboflavin (mg)	.052	.008	3.3	.5
Vitamin B_6 (mg)	.039	.007	1.8	.3
Calcium (mg)	18	4	2.3	.5
Phosphorus (mg)	30	7	3.8	.9
Magnesium (mg)	7.1	1.4	2.0	.4
Iron (mg)	.387	.115	3.9	1.2

SOURCE: 1979-80 Survey of Food Consumption in Low-Income Households.

NOTES: Absolute MPC = change in nutrient availability per ENU due to a one-dollar change in income per AME. Percentage MPC = absolute MPC divided by 1980 adult male RDA for the particular nutrient.

'Evaluated at mean cash income per AME.

across geographic region, as well as by suburban and metropolitan residence, the two stratification variables used in the survey design.

3. The Results for the Selection Bias Models

The NFCS data used in this study include information on the food use of both FSP participants and FSP-eligible households that are not receiving FSP benefits (eligible nonparticipants). These eligible nonparticipants are considered to be a comparison group for the group of FSP participants. In the absence of a control group under a true experimental design, a comparison group is critical for providing some information on what the dietary outcomes of FSP participants might be in the absence of the FSP. However, despite the fact that FSP benefits are available to all low-income households that satisfy the eligibility criteria, many eligible households do not participate in the FSP; hence, FSP participants are a self-selected group of low-income households. This self-selection of households into the participant and eligible nonparticipant groups may differentiate the two groups along dimensions other than participation status, and it is important that such differences be controlled for in order to obtain unbiased estimates of the dietary effects of the FSP.

Selection bias exists if the nutrient availability of those households that choose to participate in the FSP is either high or low to begin with, even before they participated in the FSP or even had they not participated in the FSP. The fact that eligible nonparticipants choose not to participate in the FSP suggests that they may differ systematically from participants in ways that may influence food consumption and, hence, nutrient availability. For example, the food consumption of participating households might be higher in the absence of the FSP than would the food consumption of eligible nonparticipants whose observed household characteristics are similar. If these differences that are associated with the FSP participation decision are ignored in

the statistical analysis, estimates of the effects of the food stamp benefit will be biased upward, since failing to adjust for differences in program participation will attribute all the difference in nutrient availability between participants and nonparticipants to the food assistance benefit, when in reality some difference in nutrient availability would persist in the absence of the FSP. Conversely, if participating households are those households that need food assistance the most because their initial food consumption is low, then OLS estimates of the effects of the food stamp benefit will be biased downward, since any positive effects of the benefit level on nutrient availability would be offset partially by the fact that the nutrient availability of the households of FSP participants would be lower even in the absence of the FSP.

It is not generally recognized that, in fact, two types of selection bias exist, called here Type A and Type B. The more commonly specified type of bias, Type A, arises when the food consumption levels of participants and nonparticipants in the FSP differ-holding constant all other observed characteristics--even prior to FSP participation. This type of selection bias arises because, for whatever reason, the initial level of food consumption by FSP participants and eligible nonparticipants differs.

On the other hand, Type B selection bias arises if FSP participants and eligible nonparticipants have different marginal propensities to consume food (MPC) out of income. In this case, those who ultimately participate experience an increase in food consumption whose magnitude differs from the magnitude of the increase that would be experienced by eligible nonparticipants if they were to participate. For example, if FSP participants have higher MPCs out of income than do eligible nonparticipants even in the absence of the FSP, they would be more likely to participate in the FSP and would show larger food expenditure increases from their FSP participation than would nonparticipants if they participated.

Both types of selection bias can exist simultaneously, and both are plausible for different reasons. It is possible that the two types of selection bias would lead to OLS estimates of the effects of the FSP on food expenditures and nutrient levels that are biased in opposite directions. For Type A, FSP participants may be those households that initially exhiiit the greatest need because their initial food consumption and nutrient levels are low relative to eligible nonparticipants, and food stamps offer them an important way to satisfy their needs. Thus, participants may disproportionately comprise households whose initial nutrient availability is low, leading to a downward bias in the OLS estimates of the effects of FSP benefits. For Type B, those with higher MPCs may be more likely to participate in the FSP-they "get more out of the program." Thus, the estimate of the effect of the FSP would be biased upward, because an estimated nutrient equation will show a higher MPC out of the food stamp benefit than out of cash income for the "wrong" reasons-FSP participants may in truth have higher MPCs out of all income.

Both models of selection bias can be estimated with similar maximum likelihood estimating techniques (Maddala, 1977) and are developed in model form in Appendix B to this paper. That is, an FSP participation equation can be estimated jointly with the nutrient equations, using a maximum likelihood estimation technique and allowing the error terms of the participation and nutrient equations to be correlated.[14] Given the complexity of selection bias models, we estimated the nutrient equations only for five of the nutrients: food energy, vitamin A, vitamin B_6, calcium, and iron. We chose these five dietary components because these nutrients generally have the lowest average availability levels relative to the RDA and the lowest percentage that meets the RDA.

"With Type B selection bias, the individual-specific MPC must also be allowed to be distributed normally and to be correlated with the error term in the nutrient equation.

Our major interest in this issue of selection bias focuses on two questions: (1) does adjustment for selection bias generate different estimates of the effects of the food stamp benefit on nutrient availability, and (2) does adjustment for selection bias affect the large differences between the dietary effects of FSP benefits and cash income obtained with the unadjusted models above?

Table 4 shows the results of the important parameter estimates of the selection bias models for the five dietary components.[15] This table presents estimates of (1) the MPC for the food stamp benefit and for cash income; (2) the ratio of the food stamp benefit to the cash-income MPC; and (3) estimates of the cross-equation correlation coefficients, which show the degree of correlation between the FSP participation equation and the nutrient availability equations. In terms of the estimates for the Type-A-only selection bias model, the evidence for selection bias is fairly weak. Of the five estimates of the cross-equation correlation coefficients, only one is statistically significant (vitamin B_6), and that estimated correlation coefficient is not large. With the exception of calcium, the sign of the correlation coefficients is always negative, implying that the nutrient availability levels of FSP participants would be lower than those of nonparticipants in the absence of the FSP. Consequently, for the four nutrients whose cross-equation correlation estimates are negative, both estimates of the MPCs for the food stamp benefit and the ratio of the food stamp benefit to cash-income MPC from the selection bias model exceed the OLS estimates. Indeed, despite the general lack of significance of the cross-correlation coefficients, the percentage change in the MPCs for the food stamp benefit from the OLS and selection bias models range from 14 percent for food energy to 26 percent for vitamin A.

[15]The full set of results are available upon request from the authors.

TABLE 4

RESULTS FOR SELECTION BIAS MODELS

	Food Energy	Vitamin A	Vitamin B_6	Calcium	Iron
HPC: Food Stamp Benefit					
OLS estimate	52	156	.039	18 14	.387
Type A selection bias	59	197	.046		.471
Types A and B selection bias[a]	57	175	.052	13	.365
NPC: Cash Income[b]					
OLS estimate	11	25		4	
Type A selection bias	12	26	,007 .007	4	.115.122
Types A and B selection bias:					
FSP participants	17	50			
Eligible nonparticipants	18	55	,009 .009	6 5	.188.188
Ratio of Food Stamp Benefit to Cash-Income NPC					
OLS estimate	4.73	6.24	5.57	4.50	3.37
Type A selection bias	4.92	7.58	6.57	3.50	3.86
Types A and B selection bias	3.13	3.39	5.77	2.43	1.97
Cross-Equation Correlation Coefficient, Type A (Standard Error in Parentheses)	-.041 (.034)	-.051 (.035)	-.069[d] (.035)	.047 (.034)	-.062 (.035)
Cross-Equation Correlation Coefficients, Types A and B (Standard Error in Parentheses)					
Correlation coefficient 1[e]	-.022 (.085)	-.011 (.096)	-.126 (.081)	.059 (.084)	-.010 (.073)
Correlation coefficient 2[f]	-.022 (.116)	-.072 (.146)	.047 (.167)	.016 (.122)	-.011 (.089)

SOURCE: 1979-80 Survey of Food Consumption in Low-Income Households.

NOTES: Full set of Full Information Maximum Likelihood (FIHL) results are available upon request from the authors.

[a]Evaluated at the mean HPC for FSP participants.

[b]Evaluated at mean cash income per AME.

'Correlation between error terms in nutrient equation and FSP participation equation.

[d]Significant at the .05 level.

[e]Correlation between error terms in nutrient equation and FSP participation equation.

[f]Correlation between error terms in MPC equation and FSP participation equation.

Table 4 also presents the estimates from the Type A and Type B selection bias models. As shown in the table, all correlation parameters are statistically insignificant. The correlation parameters between the nutrient and FSP participation equations are, as before, generally negative (with the exception of calcium) but are now often smaller in magnitude and less significant. The second type of correlation parameters are sometimes positive and sometimes negative, indicating no uniform correlation between the MPCs and FSP participation, and are always extremely low in statistical significance (much lower than those for Type A). Consequently, the estimated MPCs for the food stamp benefit and for cash income from the selection bias models are quite similar to the OLS estimates. In addition, the OLS finding that the MPC for the food stamp benefit is significantly larger than the cash-income MPC persists with the Type A and Type B selection bias models.

D. SUMMARY

The basic model estimated for this study relates changes in the availability of nutrients to changes in cash income and the food stamp benefit. We considered the potential biases associated with the self-selection of FSP households by developing two extensions to the basic model that account for the FSP participation decision of FSP-eligible households.

The major finding of our empirical analysis is that the estimated dietary effects of changes in FSP benefits are considerably larger than. those due to changes in cash income. While both the food stamp benefit and cash income have significant positive effects on nutrient availability, the estimated effects of changes in the food stamp benefit on nutrient levels consistently exceed the estimated effects of changes in cash income. The ratios of the MPC for the food stamp benefit to the cash-income MPC are consistently and significantly greater than one. The OLS

estimates of these ratios range from 3 to 7, and the estimates from the selection bias models for selected nutrients range from roughly 2 to 7.

An additional finding of interest is that there is no evidence of significant selection bias. We estimated two econometric models of selection bias for this study. Type A selection bias tests for whether households whose initial levels of nutrient availability differ are more or less likely to be FSP participants, while Type B selection bias tests for whether the change in the nutrient availability per dollar of cash income is greater or smaller for FSP participants relative to eligible nonparticipants. The results of the selection bias models show little evidence of either type of selection bias, and the estimated dietary effects of the food stamp benefit and cash income from the selection bias models are very similar to those from the basic model estimated by OLS regression.

V. PARTICIPATION IN THE FOOD STAMP PROGRAM BY THE HOMELESS POPULATION, AND THE EFFECTS OF THE PREPARED MEALS PROVISION

Martha Burt and Barbara Cohen

A. INTRODUCTION

Public concern about the well-being of homeless persons, particularly their nutritional status, has intensified in recent years. The Food Stamp Program (FSP) is the major federal assistance program designed to enable low-income Americans to aquire and maintain a nutritious diet. Unfortunately, since homeless persons generally lack access to storage and cooking facilities, food stamp coupons for the purchase of food items are frequently of limited help to them.

To improve the access of homeless persons to food through the FSP, and thus to improve their nutritional status, Congress passed the Homeless Eligibility Clarification Act (P.L. 99-570, Title XI, Subtitle A) in 1986. The general purpose of this legislation was to enhance the utility of FSP participation by homeless persons. Specifically, one component of this legislation, referred to herein as the "prepared meals provision," allows individuals who do not have a permanent dwelling place or mailing address to exchange food stamps for meals prepared by nonprofit organizations that feed the homeless. In turn, the sponsors of the legislation expected these food stamp exchanges to augment the resources of meal providers, thereby enabling them to offer more and better meals for homeless persons (Congressional Record--Senate, October' 6, 1986, S15247-50). Still another component of the Act expanded food stamp eligibility, making homeless persons who live at shelters at which they receive 50 percent or more of their meals newly eligible for food stamps.

The purpose of the larger study on which this paper is based (Burt and Cohen, 1988a) was to assess the extent to which the prepared meals provision responded to these objectives. This paper reports the findings pertaining to four of the objectives of that study:[16]

1. To describe FSP participation by homeless persons
2. To describe the characteristics of homeless persons
3. To describe local FSP office practices for issuing food stamps to homeless persons
4. To assess the patterns of participation by providers under the prepared meals provision, and the exchange of food stamps for prepared meals by homeless persons

B. BACKGROUND

Many local studies of the homeless population have been undertaken, but few contain information on their food stamp use or their eating patterns (see Burt and Cohen, 1988b, and U.S. General Accounting Office, 1988, for reviews). Three studies focused on current food stamp receipt: Ropers and Robertson (1985) found that 8 percent were receiving food stamps in Los Angeles County, while Brown et al. (1983) found that 19 percent of homeless persons interviewed in Phoenix were receiving food stamps, and Rossi et al. (1986) found that 24 percent of homeless respondents in Chicago reported current food stamp receipt.

Reports of dietary adequacy have been similarly disparate. Three studies provide some data on the frequency with which respondents reported that they were not getting enough to eat (Farr

[16]More extensive descriptions of the characteristics of the homeless persons interviewed for the study can be found in Burt and Cohen (1988a), along with the results relevant to four other objectives underlying the study: (1) to descrii the operations and procedures of service agencies providing meals for the homeless; (2) to descrii the meal services available in the meal provider community; (3) to describe the eating patterns of the homeless; and (4) to assess the perceptions of providers and recipients about the prepared meals provision.

et al., 1986, Rosnow et al., 1985; and Vemez et al., 1988), but, again, no central tendency emerges from these three studies. Seven percent of the respondents in three California counties, 22 percent in skid-row Los Angeles, and 55 percent in Milwaukee said that they "often/usually" did not get enough to eat. When one combines "sometimes" with "often/usually," the respective figures are 36, 52, and 78 percent. However, even the lowest of these figures compares unfavorably with the 4 percent of all U.S. households and the 20 percent of U.S. households whose incomes are below 76 percent of the official poverty line who said that they sometimes or often do not get enough to eat (Mathematica Policy Research, 1987).

The minimal data available prior to our study suggested that getting enough to eat was a problem for a substantial proportion of homeless persons, but that relatively few participated in the FSP despite their high probability of being eligible. Our research was designed to collect more extensive and more precise information on these issues and the associated factors.

Research Design

The purpose of this study was to evaluate the impact of the prepared meals provision. The impacts. of the provision were to be measured according to a pre- to post- comparison design, whereby the effects of the behaviors of interest-the eating patterns of homeless individuals and the feeding capacity of providers of meals for the homeless-would be compared before and after the implementation of the prepared meals provision on April 1, 1987.[17]

Prior to our study, no national data base existed to describe the characteristics of homeless persons or the meal services available to them in soup kitchens and shelters. Further, in only a

[17] Only the "pre" component of this design was completed because, as detailed later in this paper, so few providers became authorized under the provision that its impact, and thus the necessity of a "post" assessment, became a moot point.

few local studies was probability sampling applied to generate samples of homeless persons that could be considered representative of their population (for example, Farr et al., 1986; Rossi et al., 1986; Roth et al., 1985; and Vernez et al., 1988). Since our study of homeless persons was to be the first one that was national in scope (though limited to cities with populations of 100,000 or more) we deemed it essential that the study be based on probability sampling techniques to obtain stratified random samples of providers and homeless persons that could be generalized to a known universe.

The sample selection process involved three stages (Burt and Cohen, 1988a, Vol. II, Part B). We first selected 20 cities from among all .U.S. cities of 100,000 or more. We then selected 400 providers, representing soup kitchens, shelters without meals, and shelters that serve meals, from among all providers in these 20 cities. Before selecting these providers, we made extensive efforts to develop complete lists of all food and shelter providers in each city. Finally, we systematically selected 1,800 homeless persons from among the homeless who used the services offered by our sample of providers. Our final sample sizes were 381 providers and 1,704 service users who were homeless. The sample of homeless persons thus does not include anyone who did not use either a soup kitchen or a shelter at least once during a typical seven-day period in March 1987.

Providers were defined as facilities operating in March 1987 in the 20 cities which provided shelter to a minimum of 10 homeless adults or at least one meal each to a minimum of 15 adults (homeless or not). The facilities included soup kitchens, shelters for the homeless that do or do not offer meal services, battered women's shelters, single-room-occupancy hotels that accept general assistance vouchers, and hotels and motels that house homeless AFDC or other family households through a voucher system.

Homeless persons were defined as those who do not rent or own a room, apartment, or house, but rather reside in a shelter, welfare or voucher hotel, vehicle, abandoned building, or public place. Individuals who do not have a regular arrangement to stay in a room, apartment, or house for at least five days a week were also considered homeless. This definition includes persons who reported having a home which was actually a shelter, a bench at the local bus station, or some similar situation. It excludes persons who occasionally used a shelter (including persons who did so on the day of our interview) but had a regular arrangement to stay in a relative's apartment or house, or a house or apartment of their own. It also excludes persons who used their own money to rent a room at a single-room-occupancy or voucher hotel for the last few days, even if they also had periods of homelessness during which they used vouchers.

Data reported here on food stamp use come from in-person interviews conducted in March 1987 with homeless individuals, who were paid $5 for 15 minutes of their time. Approximately half of the standardized protocol was devoted to descriptions of eating patterns and participation in the FSP; the remainder asked for standard socioeconomic and demographic information and information on the conditions of respondents' homelessness. Descriptions of local food stamp office practices-that is, their experience with facilitating the participation of homeless persons and providing services to them-are derived from semi-structured telephone interviews with local food stamp office personnel in the 20 cities in our sample.[18]

[18] In those cities that contained more than one office (New York City and Los Angeles), we either identified and interviewed the office that served most of the homeless persons in that city or interviewed someone at a supervisory level who was the spokesperson for all offices. Half of the persons interviewed were the supervisors of eligibility/certification workers. The remaining persons who were interviewed held various positions-the supervisor of the food stamp planning section, the regional director or deputy director of income assistance services, the director of the city's FSP, and a food stamp consultant for a greater metropolitan council.

Information on the extent to which providers used the prepared meals provision comes from interviews with providers. First, in-person interviews were conducted with the sample of 381 providers in March 1987 to obtain data on their perceptions about the provision and the appropriateness of the provision for their operations from the universe of all potential users of the provision. Then, in March 1988, one year after the provision took effect, semi-structured telephone interviews were conducted with all providers who became authorized under the prepared meals provision so as to ascertain their experience with serving homeless persons.

C. FINDINGS

This paper reports on the use of food stamps by homeless persons and their experience with the FSP, and briefly touches on their dietary adequacy. It also describes local food stamp office practices that accommodate homeless food stamp applicants, and the implementation of the prepared meals provision. Readers interested in other aspects of the study may refer to other publications.[19]

1. Current Food Stamp Receipt

Virtually all service-using homeless households in our universe of cities, estimated at 194,000 in March 1987, had low enough gross incomes and few enough assets (96 and 95 percent, respectively, of the homeless households) to qualify for food stamps. Yet only 18 percent of

[19]See Burt and Cohen (1988a, Volume I) for the original report, Burt and Cohen (1988a, Volume II) for data tables, sampling and weighting methodologies, instruments, the text of the prepared meals provision, and a list of authorized providers as of March 31, 1988. See Burt and Cohen (1988b) for a comparison of this study's national results with those of other, local studies. See Burt and Cohen (1989a) for national estimates of the number of homeless individuals derived from this study and a comparison with other counts of the homeless. See Burt and Cohen (1989b) for comparisons of single women, women with children, and single men; and Cohen and Burt (1989) for comparisons of persons with histories of mental hospitalization or chemical dependency treatment with those without.

these homeless households were current food stamp recipients. Another 41 percent received food stamps at some time in the past, and another 8 percent had applied for food stamps but had not received them Thus, only one-third of the sample had never had contact with the Food Stamp Program.

The typical current spell of food stamp receipt by service-using homeless persons was not long. The median was 4.5 months, compared with 7 months for all FSP households (Burstein and Visher, 1990). Among recipients, 54 percent had been receiving food stamps for 12 months or less, and 17 percent reported that they had just begun to receive food stamps within the month of the interview. One explanation that might account for the high proportion of just-opened cases is that homeless persons apply for expedited service (which requires virtually no documentation), receive food stamps for that month, and do not return to complete the application process. Another possibility is that they complete the process, but that the instability of their lives makes it impossible for them to meet continuing FSP requirements. They may thus go on and off the program with greater rapidity than do other households. These possibilities, and others, might be appropriate topics for future research

Of the homeless persons who had applied for food stamps but were not recipients (8 percent of the sample), half indicated that their applications had been denied. Of the one-third of the homeless respondents who had never been in contact with the FSP, the most common reasons cited were that they were unaware of their eligibility (9 percent of the sample), that they did not have a mailing address (5 percent), and that they did not know where or how to apply (4 percent). It is quite possible that these respondents did not need food stamps prior to the event that precipitated homelessness, and that once they were homeless other barriers to participation became

more pertinent. However, because we do not have data on incomes or program participation prior to homelessness, we cannot explore these possibilities.

2. The Individual Characteristics That Affect FSP Participation

Several factors affect the probability that homeless persons participate in the FSP. The first column of Table 1 shows these associations. Being female and being homeless with a child were the only demographic characteristics that were important factors in current food stamp receipt. Thirteen percent of homeless males but 37 percent of homeless females received food stamps. Fourteen percent of homeless males and females who did not have a child with them received food stamps, compared with 48 percent of males and females from homeless households that contained at least one child. The variable "Household Type" shows the combined effects of the sex of the respondent and the presence of children in the homeless household. Of the women who had children with them and those who were homeless by themselves, 53 percent of the former but only 22 percent of the latter received food stamps. Even so, these single women were better off than single men, of whom only 13 percent were FSP participants.

The strongest determinant of current food stamp receipt was the household's income maintenance status, 68 percent of homeless AFDC recipient households received food stamps, as did 63 percent of GA households and 20 percent of SSI households. Only 8 percent of homeless households that did not receive one of these three sources of income maintenance received food stamps. The significant demographic characteristics (sex, presence of a child, and type of household) were themselves strongly linked to the receipt of public assistance (not shown). For example, 45 percent of homeless females received either AFDC or GA, compared with only 11 percent of homeless males, and 66 percent of homeless persons with a child received either AFDC

TABLE 1

FSP PARTICIPATION, BY SELECTED CHARACTERISTICS OF THE SAMPLE
(weighted)

Characteristics	Percent of Homeless Persons Who Receive Food Stamps	Percent of the Sample of Food Stamp Recipients	Percent of the Sample of Homeless Persons
Sex			
Male	13	63	81
Female	37	37	19
		100	100
With Child			
Yes	48	28	10
No	14	72	90
		100	100
Household Type			
Single men	13	54	73
Single women	22	11	
Women with children	53	27	3
Other	15	8	9
		100	100
Income Maintenance			
AFDC	68	17	5
GA	63	43	12
SSI	20	4	4
None	8	36	79
		100	100

or GA, compared with 11 percent of homeless persons without children. Single women were the only respondents with a substantial likelihood of receiving Supplemental Security Income (13 percent, compared with 3 percent each for women with children and single men).

Clearly, persons who are part of the welfare system because they receive income maintenance are much more likely to be successful at obtaining and maintaining food stamps than are those who are not. Even among people with homes, not all public assistance recipients receive food stamps. However, the proportion who do is significantly higher than among homeless households that receive public assistance. In the second quarter of 1987, 82 percent of all AFDC households and 40 percent of all SSI households participated in the FSP (U.S. House of Representatives, Committee on Ways and Means, 1989).

To place these findings in context, it is important that we understand the proportion of the homeless population that these food stamp recipients represent. A comparison of the figures presented in the second and third columns of Table 1 makes this point. Women comprised 19 percent of homeless adults, but 37 percent of all food stamp recipients. Homeless households with children comprised only 10 percent of all homeless households, but 28 percent of all FSP recipient households. Only 21 percent of homeless households received income maintenance (AFDC, GA, or SSI), but 64 percent of homeless food stamp recipients received income maintenance. Smgle males comprised 73 percent of homeless households but only 54 percent of all food stamp recipients.

To determine the independent effects of key characteristics of homeless respondents on current participation in the FSP, we performed a logistical regression analysis in which the current receipt of food stamps was the dependent variable. Table 2 presents the results. Current

TABLE 2

INDIVIDUAL CHARACTERISTICS ASSOCIATED WITH THE CURRENT RECEIPT OF FOOD STAMPS: BINOMIAL LOGISTICAL REGRESSION RESULTS

Indeoendent Variable	Binomial Logistical Rearession Coefficient
Currently receives income maintenance	.455***
Has a mailing address	.109***
Dru or alcohol institutionalization (4l-yes; O=no)	.082**
Minority status (l=yes; 0=no)	.047*
Homeless household includes child(ren)	.087
Has a place to cook food	-.036
Reported income for last 30 days	-.000
Age	.001
Education	.009
Gender (0=male; 1=female)	-.007
Single-person household	-.059
Length of time homeless	-.000
Length of time since last steady job	-.002
Adjusted CES-D (current depression/ demoralization)	-.009
Mental hospitalization (1=yes; 0=no)	-.043
Number of days ate at shelter	-.046
Number of servings of alcohol	-.004
Number of reported health problems	.002
Sample Size 1,704	

NOTE: Log-likelihood = -494.76; Chi-squared = 370.70

*** p < .0001
** p < .001
* p < 0 05

receipt of income maintenance has the most powerful impact on food stamp receipt. Bivariate associations with being female or being homeless with children disappear in this analysis, since they are explained largely by the association between these two factors and the receipt of income maintenance.

Three other factors have a significant effect on FSP participation--having a mailing address, having a history of drug or alcohol inpatient treatment, and being a member of a minority group. From an F'SP administrative perspective, it is interesting to note that having a mailing address still increases the likelihood of receiving food stamps, despite the fact that FNS stresses that a mailing address need not be a prerequisite for food stamp receipt. 'Ibis finding may suggest that local food stamp offices continue to use a mailing address as a criterion, even though these offices consistently report the opposite. Or the local food stamp office may not require a mailing address per se, but may refuse to use a shelter or soup kitchen as a mailing address. This situation occurred in some localities, and has the effect of restricting the access of homeless persons to the FSP. It is also possible that potential applicants and their advisors (for example, shelter operators) still believe that, contrary to fact, the FSP requires a mailing address. Fmally, in our model, "mailing address" may plausibly be a proxy for the stability of homeless persons in one place (such as a shelter), even though they are in fact homeless.

3. Local Food Stamp Office Practices Associated with FSP Participation by the Homeless Ponulation

Anecdotal information from providers and interview data from local food stamp offices in our surveyed cities indicated that homeless persons have difficulty in establishing food stamp eligiiility (due largely to insufficient documentation) and in maintaining eligibility due to regular recertification requirements. Our information on local food stamp office practices comes from

semi-structured telephone interviews that left ample opportunity for respondents to describe their practices, the problems they encountered, and their approaches for resolving them.

The most important point is that local food stamp offices do not in fact know very much about their homeless recipients. For example, none of the cities was able to provide a reliable dollar figure for the total value of food stamps issued to homeless recipients during the survey month And two-thirds could not provide data on the numbers of recipients who were homeless. The implication is that local&data for measuring program participation by the homeless are very limited. Our interviews provide the best information available on reported office practices.

A local office must complete two major procedures before participants can receive food stamps: determining eligibility and establishing a workable method of issuing the food stamps every month The responses of our homeless respondents and of the local food stamp office personnel indicate the problems that homelessness tends to pose for both.

a. Eligibility Determination

The vast majority of offices in the sample (17 of the 20 offices) reported problems with determining eligibility for the homeless. The lack of proper identification and other documentation was cited most frequently (by 11 of the 20 offices interviewed). As of 1989, all homeless households are eligible for expedited service, which provides food stamp benefits within 5 days of application, as authorized by the McKinney Act (P.L. 100-7). At the time the data were collected in March 1987, expedited service was available to all households whose monthly gross incomes were less than $150 and whose liquid assets were no more than $100. The local food stamp offices need to verify only the identity of the applicant in order to issue food stamp benefits for the first month under expedited service. However, the household may continue to receive food stamps beyond the first month only if it provides verification for gross non-exempt income, alien

status, utility expenses (if in excess of the standard utility allowance), medical expenses (for elderly and disabled persons), Social Security number, disability status, and other necessary certification criteria

Homeless applicants often do not have enough documentation, or do not have the proper types of documentation, to satisfy the standard certification practices of local food stamp offices. The offices in our sample stated that they had attempted to resolve eligibility problems by allowing collateral contacts (such as social service workers, relatives, and shelter operators) to provide identifying information for homeless applicants. Five offices also indicated that they had been willing to accept miscellaneous identification sources, such as supermarket cards, unemployment insurance cards, and hospital or other medical cards.

Fiie of the offices also mentioned that the failure of homeless applicants to keep appointments, including follow-up appointments, precluded establishing a positive eligibility determination for them. The lack of transportation to the food stamp office and mental health problems (that is, applicants provided unusable information, or had trouble with procedures) were mentioned by two offices as precluding positive eligibility, determinations. Establishing residency in a jurisdiction was also noted by three offices as part of the problem. Waiving residency requirements or merely accepting the client's declaration of residency were reported as ways to overcome this constraint to a positive eligibility determination.

Nineteen of the 20 cities reported granting expedited service to homeless applicants. Seven cities reported that all of their homeless cases received expedited service; 5 reported that 90 to 99 percent of their homeless recipients received this service; 3 reported that 60 to 89 percent of their homeless eligibles received the service. Four cities did not know the proportion of homeless recipients whose cases were subject to expedited service.

b. Issuance

The problem of establishing a way to issue the stamps once eligibility has been determined was reported to be less serious. Twelve cities reported no problems with issuance. Five of these cities reported that they allowed homeless individuals to pick food stamps up at the local office; 3 reported that they sent the stamps to any local address at which the client had permission to receive mail; 2 used general delivery; and 2 allowed homeless recipients to pick the food stamps up at any currency exchange (at which welfare checks can also be cashed). Of the offices that did experience problems with issuance, five offices reported that clients had moved, not picked up mail, or returned mail, and two offices reported that the post office did not allow the use of general delivery for food stamps.

c. Other Procedures

We were interested in whether food stamp offices in our sampled cities used any other procedures to inform homeless clients of their eligibility or to make any other special arrangements for them. It should be noted that these data were gathered before the Stewart B. McKinney Homeless Assistance Act was passed in 1987, which authorized federal reimbursement for FSP outreach activities for the homeless.

Six cities reported no special procedures. Of those that did implement outreach procedures, nine disseminated written materials, five ran radio or TV spot announcements or developed posters or guides for use at shelters, two left literature in their waiting rooms, and two provided information on FSP eligibility to AFDC and General Assistance applicants. Eleven relied on in-person contacts: 5 arranged meetings or speaking engagements with service providers to inform them of procedures to help the homeless receive food stamps; 3 assigned a local worker or a special unit of workers to contact providers and other community leaders; and 3 reported that

they generally interacted on a regular basis with providers, although they did not designate a worker to lead outreach activities.

Information-sharing among local food stamp offices might be helpful to offices that have not attracted a sufficient number of homeless recipients, since many offices have developed policies and procedures to facilitate the access of homeless persons to their program.

4. The Use of Food Stamps by Homeless Recipients

Homeless respondents were asked how they used food stamps when they received them. We were particularly interested in any patterns of utilization other than food-purchasing in grocery stores. Since food stamps have an "on the street" value that is independent of their value in purchasing food it was important that we assess the experience of respondents with losing their stamps or having them stolen, or selling them for cash (Unfortunately, we did not ask about trading stamps for clothing or other goods, which we subsequently learned is not uncommon--perhaps more common than exchanging food stamps for cash.)

Buying food at grocery stores was clearly the dominant use of food stamps (84 percent of the homeless individuals who were receiving food stamps at the time of the survey). Homeless food stamp recipients also mentioned two other uses-purchasing meals at restaurants (13 percent) and turning their food stamps directly over to their residential program (14 percent).

As far as we were able to determine, none of the cities in our sample had instituted special programs to allow homeless food stamp recipients to use food stamps in restaurants. Thus, the use of food stamps at restaurants is probably sub rosa. Small neighborhood restaurants may be willing to accept food stamps from customers and then arrange with a local grocer authorized to receive food stamps to exchange the stamps for the equivalent value in food. Providers told us

that such informal arrangements exist, but we had no way to determine their prevalence or the extent to which homeless persons might have had access to them.

The Effects of Food Stamp Receipt. Our data indicated that 19 percent of the respondents often did not get enough to eat, and another 19 percent sometimes did not get enough. Seventy-five percent ate twice a day or less. Thirty-six percent said they went one or more days out of the last seven days without eating.

The receipt of food stamps, and the average monthly per-person dollar value of the stamps received, made a difference in the eating patterns and dietary adequacy of respondents. The higher the average per-person food stamp benefit, the more times the respondent ate daily, on average. A higher food stamp benefit was also associated with an increased number of servings of all foods eaten on the day before the interview, and with foods eaten from more of the five core food groups (milk products, vegetables, fruits, grain products, and meat and meat alternatives). Thus, food stamp receipt promoted the intended goal of the FSP--to improve the dietary intake and nutritional adequacy of recipients.

5. Experience with the Prepared Meals Provision

The prepared meals provision went into effect on April 1, 1987. As of March 31, 1988, one year later, 40 programs of the more than 3,000 meal and shelter providers that serve the homeless in this country had become authorized, and one application was pending, for an authorization rate of less than 2 percent. Thus, why were so few providers interested in becoming authorized under the prepared meals provision?

The most important aspects of the provision that hindered its acceptance can briefly be described here. First, most meals for the homeless are offered free, yet providers must charge

for meals in order to make the provision work Many providers did not want to change their practice of offering free meals, in the belief that their clients needed free meals and because they were committed to providing such meals in the most hospitable way possible. Second, providers believed that their clients needed their food stamps, and used soup kitchen and shelter meal services to supplement their food stamp benefit. These providers were reluctant to ask clients for food stamps when they were aware of their clients' limited resources. Third, and least important according to providers, many providers relied on donated foods for a substantial proportion of food that they served Eighteen percent made no cash purchases, and only 26 percent relied on purchased food for more than half of the food that they served. However, the prepared meals provision allows providers to charge in food stamps only what they lay out in cash to purchase food. Providers with relatively small cash budgets for food felt that the provisions would not help them very much.

a. The Characteristics of Providers That Sought and Obtained Authorization

Here, we describe the characteristics of the few providers that did obtain authorization under the provision, and their experience during the first year of its operation. The description that follows is based on information gathered through semi-structured telephone interviews in March 1988. Most authorized providers were not part of the earlier systematic sample of 381 providers interviewed in our 20 sampled cities in March 1987.

Of the 40 authorized providers, all but 2 were shelters. Of the remaining two, one was a low-cost nonprofit restaurant and the other a soup kitchen. The shelters served an average of 47 homeless persons per meal, with a range of 3 to 220. The only two authorized providers that were not shelters offered meal programs that were as large as those of the largest shelters. The single soup kitchen served an estimated 240 persons per meal, the nonprofit restaurant served

250 to 300 meals a day to approximately 175 to 200 individuals. The majority of the authorized providers (32 of the 40) served three meals a day. Most of the rest (5) served only breakfast and lunch.

Reasons for Applying. Most authorized providers applied because they wanted to be able to purchase larger quantities of food and more nutritious food (30 of the 37 providers that gave reasons for applying). The next most frequently cited reason (by 14 providers) was that they wanted to let people contribute, let them have more dignity, or create an environment similar to a regular restaurant. Sk providers saw the provision as a way to prompt residents to apply for food stamps, so they would have that resource once they left the shelter. Three providers thought that food stamps would help them extend their service-either to serve more persons at their current location or to extend meal service to locations that did not have it. Several providers gave multiple responses.

The Application Process. With few exceptions, the authorized providers thought that the application process itself was very easy. Threequarters (29 providers) described it as simple and quick, and facilitated by helpful staff at the local FNS office. Another 8 reported minor difficulties, all of which were eventually resolved. Only 3 thought that the forms were complex and the process long. One provider had problems with the local welfare department, which did not want to sign off on the application.

b. The Use of the Provision by Providers

Despite being authorized to accept food stamps in exchange for prepared meals, not all of the authorized providers were doing so at the time they were interviewed. Just over half of the authorized providers (22 providers) had clients who received food stamps, and at least some of these clients exchanged their food stamps for prepared meals. Another ten authorized providers

had clients who received food stamps, but none of these clients was willing to exchange his or her food stamps for meals from the facility, although he or she continued to eat there. Five authorized providers did not have any clients who received food stamps at the time of the interview- And three could not say whether or not their clients received food stamps.

Even for providers who did receive some food stamps from their clients, by no means were all food stamp recipients willing to exchange food stamps for prepared meals, as shown in the first two columns of Table 3. The actual number of homeless persons who exchanged food stamps for prepared meals under the provision one year after its implementation totaled only 262 per day, about 10 percent of the clients at authorized facilities. It is also noteworthy that three providers accounted for two-thirds of this total--serving approximately 75, 60, and 35 clients per day who paid with food stamps.

TABLE 3

EXCHANGE OF FOOD STAMPS FOR PREPARED MEALS
AT AUTHORIZED PROVIDERS WHO RECEIVED ANY FOOD STAMPS

Percent of Food Stamp Recipients Exchanging Food Stamps	Percent of Providers That Received Any Food Stamps (N = 22)	Percent of AU Authorized Providers (N = 40)	Total Number of Clients Exchanging Food Stamps
90- 100%	41	23	205
50 - 89	27	15	43
34 - 49	0	0	0
10 - 33	32	17	14
	100%	55%	262

Among those that had become authorized, some were not collecting food stamps as a matter of policy (8 providers); others were willing but their clients were not (10 providers). Providers that had not activated the program or that had dropped it were asked for their experience with the provision. Representative responses included the following:

- We tried it for three weeks, but it didn't work We couldn't keep track of who was eligible, some people couldn't qualify, and some people spent their food stamps elsewhere.
- We didn't realize that we would have to make some recipients pay and some not, so we're not using the program.
- Our residents stay too short a time to get them certified for food stamps.
- We had started asking for $1 per meal in food stamps from those who had them, but it caused disruptions because some had to pay while others didn't. So we stopped until there is some uniform policy [from FNS].

The difficulties experienced by authorized providers either in establishing effective food stamp collection procedures or in convincing food stamp recipients to contribute are important to note, since they underscore the mismatch between the conception of the prepared meals provision and the actual circumstances faced by providers who feed the homeless.

c. Informing Clients and Establishing Charges

As noted earlier, only just over half of the authorized providers (22 out of 40) actually received food stamps from any clients in exchange for prepared meals one year after the provision took effect. The approaches adopted by authorized providers to inform clients about the possibility of exchanging food stamps for meals and to set meal charges are enlightening, in that they tell us about the conditions under which the provision seems to have worked.

Thirteen providers either no longer informed their residents about the possibility of exchanging food stamps for prepared meals, never did so, or had not yet done so. Some preferred that their clients begin saving their food stamps for use after they left the shelter. Others had once informed their clients about the exchange of food stamps, but had decided that they could not successfully administer the program if they allowed some to pay and others not to pay for their meals. Those that indicated that they had "not yet" informed their residents had only recently been authorized, and had not yet decided what procedures should be used Another 10 providers did inform some clients, but had no systematic method for informing all clients. Some posted signs, which they believed were ignored. Some informed clients about becoming food stamp recipients only if the clients asked for information. Some informed only those whom they perceived were eligible for food stamps.

Another 13 authorized providers (all shelters) informed all clients in a routine, systematic way, usually at intake. Some of these providers specified the amount and frequency with which clients were expected to pay; others left the amount of the donation up to the individual. All stressed the voluntary nature of the donation. Two providers systematically informed only the subgroup of residents who were expected to remain residents of the shelter for a long period of time. One of these adopted the provision experimentally. The other implemented the provision as regular policy, but stopped asking for donations during the last two weeks of a person's stay, to enable the client to save stamps in order to "get a start" when he or she moved into permanent housing. Two providers (not shelters) informed all clients "at the door" before they were offered meals, as part of regular policy of asking for payment on a per-meal basis. Both of these providers charged for every meal, either in cash, food stamps, or labor (work exchange), and required that all clients make payment, including work, before they received the food Both were

set up as restaurants (one was a nonprofit restaurant; one was a snack bar in a mission). The at-the-door arrangements of these two providers suited their situations; since everyone was required to pay something, they would not be discriminating against food stamp recipients by requesting that they be the only clients to pay for their food.

With the exception of the two providers who charged for every meal, shelter providers who received food stamps from their residents made these arrangements on a weekly or monthly basis. Most providers charged per-person amounts, but some also had a per-family charge, and one had a reduced charge for children. Charges per meal ranged from $0.45 to $2.00. Charges per-person per day ranged from $2.00 to $4.00. Charges per family per day ranged from $3.00 to $5.00. One provider charged $120.00 per month for a family unit.

The typical method of setting the charge for residents was to divide the yearly food budget for purchased foods by the number of meals served per year. The local welfare department or food stamp office set the amount in several cases. One provider reported charging "what it would cost if it were all purchased." One asked clients for an unspecified contribution "because most of the food is donated." Nonresidents who ate meals at the provider's establishment were rarely asked to pay anything. The emphasis at all providers was on the voluntary nature of the use of food stamps. Most providers in fact quoted the cost of the meal only to food stamp recipients, so that in effect only food stamp recipients were asked to pay. No one was ever turned away for not paying, although three providers required work exchange for those who could not pay either in cash or in food stamps. All three of the providers that required work exchange were doing so before they became authorized under the prepared meals provision.

d. Reporting Requirements

The reporting requirements were clearly not a major reason that so few establishments adopted the provision. Of the providers that were still collecting food stamps in exchange for prepared meals, all but the nonprofit restaurant stated that the reporting process took about 15 minutes. Three factors appeared to differentiate the reporting experiences of the nonprofit restaurant from those of other authorized providers: (1) it accepted both cash and food stamps; (2) it collected on a per-meal basis; and (3) many of its clients paid for meals with food stamps (an average of 75 persons per day, for 1 or 2 meals each).

D. RECOMMENDATIONS AND CONCLUSIONS

To improve the dietary adequacy of homeless persons, policymakers have two obvious alternative approaches. First, they can alter existing programs for enhancing the dietary adequacy of all income eligibles to accommodate the unique circumstances of homeless persons. This approach would seek to put the resources for acquiring food directly into the hands of individual homeless persons. As the nation's largest anti-hunger program, the FSP is the obvious target for these efforts.

Alternatively, policymakers can establish or expand efforts to increase the feeding capacity of the emergency food network--soup kitchens, shelters, and other providers that prepare and serve meals to homeless people. Given the difficulties of getting homeless persons into the FSP and because the FSP is less appropriate for homeless persons than for others (given the necessity of storage and cooking facilities for purchased food), it is reasonable to maintain that expanding the capacity of the emergency food network to serve more people higher-quality meals more frequently is the most direct and efficacious approach for improving the diets of homeless persons. USDA's commodity distniution programs are the obvious targets for these efforts (the Emergency

Food and Shelter Program would be an additional target). In March 1987, two-thirds of meal providers were already receiving some form of USDA commodities. Both the amounts and varieties of food could be expanded at these providers, and the remaining providers could be brought into the distribution system.

The primary goal of the prepared meal provision was to improve the nutrition of homeless persons. To accomplish this goal, Congress adopted the first alternative approach by altering the FSP to allow the homeless to exchange their food stamps for prepared foods, but only if they obtained these meals from nonprofit soup kitchens and shelters. The prepared meal provision clearly did not fulfill its intent. Less than 2 percent of potential participants (meal providers) applied, and half of those that did apply could not accommodate the provision in their service delivery context. Not only did relatively few of the homeless persons have food stamps, but sizable proportions of those who did would not give them to the meal providers in exchange for meals.

Other legislation has been enacted along both of the approaches. In the Homeless Eligibility Clarification Act (P.L. 99-570, Subtitle XI)--the same act that established the prepared meals provision--Congress expanded FSP eligibility to homeless persons who reside in shelters at which they receive half or more of their daily meals. Earlier, in the Food Security Act of 1985, Congress reasserted that a fixed mailing address was not required for FSP eligibility. The Stewart B. McKinney Homeless Assistance Act of 1987 (P.L. 100-77) made several changes in FSP regulations to help those already homeless to obtain food stamps--federally reimbursed outreach efforts to contact and enroll the homeless; the expansion of expedited service to enable homeless individuals to receive stamps within 5 days; and, for the purpose of eligibility and benefit determination, the exclusion of third-party payments for temporary housing if the housing lacks meal preparation facilities. Other changes were intended to prevent homelessness--increasing the

ceiling on the excess shelter deduction, and instituting special regulations to govern certain doubled-up living situations. Legislation to give resources (either cash or food) directly to meal providers in the emergency food network has also been enacted. The McKinney Act of 1987 made a permanent program of the Emergency Food and Shelter Program, much of whose resources are targeted specifically toward homeless and potentially homeless persons. And the Hunger Relief Act of 1988 (P.L. 100-435) authorized funding ($40 million) for the first time for USDA to purchase commodities for distribution to soup kitchens and food banks, rather than simply distributing, available surplus commodities.

There are important arguments for and against each of these approaches. The data presented in this report suggest that each may be more appropriate for different segments of the homeless population. Further, it must be recognized that either alternative FSP regulations or the expansion/enhancement of the emergency food network largely address only how best to feed people once they are homeless. Only a few changes made by the McKinney Act address how, in conjunction with changes in other safety net programs, the FSP and other nutrition program regulations might be altered to help prevent homelessness.

The FSP spends close to $14 billion dollars a year to serve about 19 million individuals, virtually all of whom have permanent housing. The FSP is geared toward households whose circumstances are relatively stable--that is, those that have cooking and storage facilities. The dollar value of food stamps is predicated on assumptions about food purchases, food preparation and storage, and thus food consumption that can be met only by households that can shop judiciously, cook from scratch, and store prepared foods. While homeless persons can purchase many food items that need not be cooked before they are consumed, the additional expense of such items means that a typical food stamp allocation will not last very long.

To some extent, trying to change the FSP to accommodate homeless persons is an exercise akin to a very small tail wagging a very big dog. However, based on the evidence from our study, some homeless households are likely to be able to complete food stamp eligibility procedures and to maintain participation in the program. These are the homeless persons who are most similar to food stamp recipients who have housing--those who are receiving AFDC, GA, or SSI, who are stable and consistent shelter residents, or who have relatively few personal problems that would create difficulties for following through with agency procedures. As shown earlier, homeless households that received income maintenance were very much more likely than others to participate in the FSP, yet even for these households their participation rates were below those for households with homes. Greater efforts at co-processing applications or other mechanisms to coordinate income maintenance and food stamp receipt would probably pay off in higher FSP enrollment rates for homeless households. Our data indicate that FSP participation does improve the adequacy of the diets of homeless persons. Thus, higher participation rates would contribute to the goal of improving nutrition among homeless persons.

Increasing the resources of the emergency food network to provide more meals to the homeless population is an appealing alternative strategy, especially for those homeless persons, usually single individuals, whose personal problems and uncertain circumstances make them unlikely to establish or maintain FSP participation, These homeless persons present unique challenges to the FSP in terms of eligibility determination, recertification, and issuance. They frequently lack necessary documentation, the resources to obtain it, and a secure place to keep it. They have trouble with schedules and return appointments, in part because their days and weeks lack routine, in part because many have disabling conditions (primarily mental illness or chemical dependency), and in part because their days are consumed by efforts to obtain basic shelter and food from

available programs. Thus, any mechanism that improves the likelihood that persons will receive nourishing meals, including relying on the emergency food network, is welcome.

However, while increasing support for the emergency food network is perhaps the simplest and most direct way to ensure that homeless persons are fed, the question must be raised about whether it is good public policy to develop and maintain an entire new structure of organizations and providers to feed people on an emergency basis. Further, the great expansion in this network nationwide over the past several years raises a question about whether the network is addressing an "emergency,' or whether the homeless and near-homeless chronically lack an adequate diet. The more chronic the situation, the greater the focus should be on improving safety-net programs to address the issue rather than relying on the emergency food network. Anti-hunger advocates argue that the situation has indeed gone beyond an "emergency," and they particularly make the point that they would prefer to see the emergency food network go out of business--provided that other safety net programs were functioning in ways that eliminated the necessity for the network's feeding services (see, for example, Food and Hunger Hotline, 1987).

If the FSP is committed to increasing the enrollment rate of homeless persons, then bringing the participation rates of homeless income maintenance recipients up to those of income maintenance recipients with housing is probably the easiest task. Much more difficult will be efforts to enroll the homeless who do not receive income maintenance, since they represent about four of five homeless adults, and the single males among them are clearly the target group in greatest need of improved nutrition. Outreach efforts, simplified eligibility procedures, minimal repeat office visits, flexible requirements for documentation, a willingness to accept shelters and soup kitchens as mailing addresses, and new approaches to resolving issuance and recertification problems--all are required to meet the objective. Amid the anecdotes that we heard from

providers about the difficulties of getting clients into the FSP was an occasional success story that hinged on the local food stamp office's sending an eligibility worker out to the shelter every month to process new applicants and deal with recertifications. Research could identify exemplary efforts to enroll homeless persons and to determine why they are successful.

VI. THE EFFECTIVENESS OF USDA FOOD ASSISTANCE PROGRAMS AT MEETING THE FOOD AND NUTRITION NEEDS OF THE LOW-INCOME ELDERLY

Michael Ponza

A. INTRODUCTION

The number of Americans 65 years of age and older is increasing rapidly and is projected to more than double over the next forty years (U.S. Senate Special Committee on Aging, 1987-88). Concomitant with the aging of the population, the overall economic status of elderly persons has been improving, as evidenced by the dramatic decline in the poverty rate among the elderly population from 29.5 to 12.4 percent from 1966 to 1986 (U.S. Senate Special Committee on Aging, 1987-88).

However, despite the improved economic status of elderly persons as a group, 7.4 million (or 28 percent of the elderly) are living either below or near poverty (Commonwealth Fund Commission, 1987). A disproportionate number of these poor and near-poor elderly persons are women, members of minority groups, those who live alone, and persons age 85 or older (Rowland and Lyons, 1988). Moreover, these groups of elderly persons are projected to grow rapidly in the next several decades, and to continue to have low incomes and few financial assets (U.S. General Accounting Office, 1986).

Age and poverty tend to be strongly associated with inadequate diets (U.S. Department of Health, Education, and Welfare, 1974; and Davis et al., 1985). In turn, proper diet is believed to be important to extending life expectancy and prolonging good health (U.S. Department of Health and Human Services, Public Health Service, 1988). Therefore, these trends in the aging of the

U.S. population and the economic status of the elderly population have crucial policy implications for those interested in the health and nutrition of the elderly.

A network of public and private food assistance programs has emerged during the past few decades to address the food and nutritional needs of the elderly population. The benefits provided by federal programs range from coupons redeemable for food at authorized retail food stores (under the Food Stamp Program) to food packages (under the Temporary Emergency Food Assistance Program and Commodity Supplemental Food Program), and prepared meals (under Title III meals), the latter of which are either home-delivered or served in group settings. The objective of this paper is to examine the extent to which this network of USDA food assistance programs meets the food and nutrition needs of the low-income elderly population.

Our examination of this issue entailed reviewing and synthesizing information from a diverse set of extant studies and data bases," undertaking further empirical analysis of existing data (from the 1984 Survey of Income and Program Participation), and conducting limited-scale original data collection (consisting of focus group discussions with USDA program participants and nonparticipants in three major cities).

The remainder of this paper is organized as follows. Section B examines the characteristics and nutritional needs of the low-income elderly population and assesses how well USDA food assistance programs meet their food and nutritional needs. For each of these topics, we briefly describe the research methods and data sources, present and discuss the principal findings, and

[20]These data sources include (1) nationally representative household survey data, such as the Health and Nutrition Examination Surveys, the Nationwide Food Consumption Surveys, the Survey of Food Consumption in Low-Income Households, the TEFAP Survey, the National Evaluation of Title III Meal Programs, the Survey of Income and Program Participation, and the Panel Study of Income Dynamics; (2) less representative data, such as the Food Stamp SSI/Elderly Cashout Demonstration; (3) smaller-scale clinical studies; and (4) reviews of the most relevant literature.

discuss the limitations of the research. Section C discusses the implications for USDA food assistance program policy in general and Food Stamp Program (FSP) policy in particular. The section concludes with a brief discussion of the suggested direction of future research.

B. PRINCIPAL FINDINGS

Our discussion in this section is organized around two major research areas. Section 1 describes the characteristics and nutritional needs of the low-income elderly, and Section 2 assesses the effectiveness of USDA programs at meeting the food and nutrition needs of the low-income elderly. We conclude each section by discussing the methodological limitations imposed by the available data for the research.

1. The Characteristics and Nutritional Needs of the Low-Income Elderly

A comprehensive profile of the demographic and socioeconomic characteristics, health circumstances, and food and nutritional needs of the low-income elderly population is necessary in order to determine the size and particular programmatic needs of the target groups of low-income elderly and, ultimately, to assess how well USDA programs meet those needs. This profile was constructed on the basis of data from the 1984 Survey of Income and Program Participation (SIPP), other national data sets, and reviews of published materials.

a. Who Are the Low-Income Elderly?

In 1984, over 30 million persons in the United States were age 60 or older. Over 13 million, or 40 percent, lived in households whose monthly money income was below 185 percent of the federal poverty threshold. As a group, these low-income elderly persons have few financial assets from which they can supplement their incomes, they exhibit high rates of functional impairment

and chronic illness, and, relative to the high-income elderly,[21] they are disproportionately less educated, living alone, and older than age 85.[22] For example, Table 1 shows that:

- Forty-six percent of the low-income elderly are unmarried and live alone, compared with only 12 percent of the high-income elderly.
- Fifty-nine percent of the low-income elderly report difficulty with one or more activities of daily living (ADLs), compared with 31 percent of the high-income elderly.
- The median financial net worth[23] of the low-income elderly is $900, compared with $41,900 for the high-income elderly.

b. The Low-Income Elderly Population Is Not Homogeneous

Despite a greater overall prevalence of functional limitations and chronic health conditions, and little financial wealth, the low-income elderly population comprises several diverse groups who exhibit different limitations and food assistance needs, and the capacities to meet those needs. For example, Table 2 shows that:

- Relative to the young-old (age 60-74) low-income elderly, the old-old (age 85 and older) low-income elderly exhibit higher rates of functional impairment and hospitalization, are more likely to be living alone, and are less educated. While money income available to meet needs is roughly

[21] The high-income elderly are persons age 60 or older whose household money income is greater than 300 percent of the poverty threshold

[22] As shown in Section l.e, each of these factors represents a major risk of inadequate nutrition in elderly persons.

[23] Financial net worth equals the value of passbook savings accounts, money market deposit accounts, certificates of deposit, interest-earning checking accounts, money market funds, U.S. government securities, municipal or corporate bonds, stocks and mutual funds shares, U.S. savings bonds, IRA and Keogh accounts, regular checking accounts, mortgages held for the sale of real estate, amounts due from sales of business or property, other interest-earning assets, and other financial assets, minus unsecured debt.

TABLE 1

SELECTED CHARACTERISTICS OF THE LOW-INCOME AND HIGH-INCOME ELDERLY, 1984

Characteristic	Low-Income Elderly	High-Income Elderly
Female	67%	50%
Black or Hispanic	18	5
85 Years Old or Older	8	3
Completed Less than 12 Grades	68	28
Unmarried, Living Alone	46	12
Difficulty with 1 or More ADLs	59	31
Needs Help with 1 or More ADLs	20	10
Average Number of Days Spent in Bed	9	3.5
Median Monthly Household Income	$602	$2,705
Median Monthly Household Income/Needs	1.22	4.56
Median Total Net Worth	$27,500	$125,800
Median Net Worth Excluding Home and Vehicles	1,500	58,100
Median Financial Net Worth	900	41,900
Sample Size	2,942 (2,910)	3,100 (3,182)

SOURCE: April Extract of the Wave 3 1984 Panel of SIPP; August Extract of the Wave 4 1984 Panel of SIPP.

NOTE: All tabulations are based on weighted data; sample sizes are unweighted. Sample sizes in parentheses refer to the August extract (i.e., income and wealth measures); other sample sizes refer to the April extract (demographic and health limitation measures). A person is defined as "low-income" if household money income is less than 185 percent of the official poverty threshold defined by the federal government; "high-income* if household money income is greater than 300 percent of the poverty line. "Elderly" is defined as those persons age 60 years and older.

TABLE 2

SELECTED CHARACTERISTICS OF SUBGROUPS OF THE LOW-INCOME ELDERLY, 1984

Characteristic	Living Alone	Living with Spouse	Young-Old	Old-Old	Black	White	Female	Hale
Female	83%	45%	64%	76%	66%	67%	100%	--
Completed Less Than 12 Grades	65	69	65	74	84	64	66	71
Unmarried, Living Alone	100	--	39	69	37	48	58	23
Married	--	100	47	15	36	41	27	66
In labor Force	9	18	18	--	14	12	9	17
Difficulty Getting Outside	20	15	13	44	22	18	21	14
Difficulty with 1 or More ADLs	64	52	53	83	71	58	63	52
Needs Help Preparing Meals	7	11	7	29	17	10	10	14
Needs Help with 1 or More ADLs	18	18	14	45	38	19	21	18
Poor/Fair Health	53	58	56	56	72	54	56	58
Average Number of Days Spent in Bed	7	9	8	11	12	8	8	9
Median Monthly Household Income/Needs	1.11	1.35	1.25	1.19	1.06	1.26	1.19	1.32
Median Total Net Worth	$20,000	$37,500	$22,500	$30,400	$6,900	$32,349	$24,700	$29,433
Median Financial Net Worth	1,000	1,500	400	2,900	0	2,090	1,000	730
Sample Size	1,342 (911)	1.183 (1,246)	1,838 (1,083)	231 (1,692)	569 (214)	2,942 (536)	2,942 (2,710)	766 (2,710)

SOURCE: April Extract of the Wave 3 1984 Panel of SIPP; August Extract of the Wave 4 1984 Panel of SIPP.

NOTE: All tabulations are based on weighted data: sample sizes are unweighted. Sample sizes in parentheses refer to the August extract (income and wealth measures); other sample sizes refer to the April extract (demographic and health limitation measures). A person is defined as "low-income" if household money income is less than 185 percent of the official poverty threshold defined by the federal government. "Elderly" is defined as those persons age 60 years and older; "living alone" refers to low-income elderly persons living alone: "living with spouse" includes those low-income elderly living with a spouse only or with a spouse and others (related or unrelated). "Younger-old" refers to low-income elderly persons ages 60 to 74; "older-old" refers to low-income elderly persons age 85 years and older.

equivalent for the two groups, the old-old low-income elderly have more financial assets from which they can supplement their income.

- Relative to the low-income elderly who live with their spouse, the low-income elderly who live alone are more likely to report difficulties in performing ADLs and to have less income (relative to needs) and less wealth.

- Relative to white low-income elderly persons, black low-income elderly persons are more likely to experience difficulty and to need help with ADLs, to report that their health is poor, to be confined to bed, and to have less income and wealth.

- Relative to low-income elderly males, low-income elderly females are more likely to be living alone, to experience difficulty or to need help with ADLs, and to have less income.

C. The Low-Income Elderly and Nonelderly Populations Differ

Many of the USDA-FNS food assistance programs serve both the elderly and nonelderly low-income populations. Based on household income[24] and wealth, the low-income elderly are better-off financially on average than the low-income nonelderly. However, the low-income elderly are more likely to be functionally impaired, in poor health, and living alone. For example, Table 3 shows that:

- Forty-six percent of the low-income elderly live alone, compared with 12 percent of the low-income nonelderly.

- Fifty-nine percent of the low-income elderly experience difficulty with one or more ADLs, and 20 percent need help with one or more ADLs, compared with 19 and 4 percent, respectively, of the low-income nonelderly.

- The median net financial worth of the low-income elderly is $900, compared with essentially $0 for the low-income nonelderly.

[24]Our measure of household income includes total cash income plus the value of selected in-kind benefits that can be quantified easily--food stamps, energy assistance, WIC, and subsidized school lunches and breakfasts.

TABLE 3

SELECTED CHARACTERISTICS OF THE LOW-INCOME ELDERLY AND LOW-INCOME NONELDERLY, 1984

Characteristic	Low-Income Elderly	Low-Income Nonelderly
Female	67%	58%
Black or Hispanic	18	35
Completed Less Than 12 Grades	68	39
Unmarried, Living Alone	46	12
Difficulty with 1 or More ADLs	59	19
Needs Help with 1 or more ADLs	20	4
Poor or Fair Health	57	24
Average Number of Days Spent in Bed	9	4
Median Monthly Household Income	$602	$898
Median Monthly Household Income/Needs	1.22	1.15
Median Total Net Worth	$25,700	$5,100
Median Financial Net Worth	900	0
No Health Insurance	7%	35%
Sample Size	2,942 (2,910)	2,588 (2,539)

SOURCE: April Extract of the Wave 3 1984 Panel of SIPP; August Extract of the Wave 1984 Panel of SIPP.

NOTE: All tabulations are based on weighted data; sample sizes are unweighted. Sample sizes in parentheses refer to the August extract (income and wealth measures); other sample sizes refer to the April extract (demographic and health limitation measures). A person is defined as "low-income" if household money income is less than 185 percent of the official poverty threshold defined by the federal government. "Elderly" is defined as those persons age 60 years and older; "nonelderly" is defined as those persons ages 18 to 59.

d. Many Elderly Persons Make Poor Food Choices and Engage in Eating Behaviors Linked to an Increased Risk of Poor Nutrition

Data from the 1977-78 NFCS show that elderly persons consume more fats, sugars, and cholesterol and less complex carbohydrates than are recommended (U.S. Department of Agriculture, 1984). Fruits and vegetables are not consumed as frequently as is recommended, and milk and dairy products are often omitted (Schlenker, 1984). In general, elderly persons consume adequate amounts of breads and cereals, but their food choices among these groups tend to be highly refined and low in fiber. Elderly persons, especially those who live alone, engage in eating behavior that the literature has shown is linked with poor food choice, nutrient intake, and dietary status--for instance, skipping meals, eating away from home, and eating alone (Davis et al., 1988). Based on the limited data directly available on these subjects, the food choices and eating behavior of the low-income elderly appear to be worse than those of all elderly persons (Davis et al., 1985).

e. Elderly Persons Are at Increased Risk of Nutrient Deficiencies

Nutritional surveys of elderly persons, although limited and flawed, suggest a low to moderate prevalence of actual nutrient deficiencies and an increased "risk" of nutrient deficiencies whereby they are consuming substantially below RDAs (Young, 1983; U.S. Congress, Office of Technology Assessment, 1985; and U.S. Department of Health and Human Services and U.S. Department of Agriculture, 1986). In each instance, however, the situation (relative to the overall elderly population) is worse for the low-income elderly and for particular subgroups of the low-income elderly: those who have the lowest income, are living alone, are members of minority groups, are residing in rural and inner-city locations, and are older (Munro, 1982; Bowman and Rosenberg, 1982; U.S. Department of Agriculture, 1984, Kumanyika and Chee, 1987; and Myrianthopoulos, 1987).

f. Limitations of the Research

Constraints on the resources available for this aspect of the research and certain limitations with SIPP data precluded our defining economic status in a way that completely captures the financial resources of the low-income elderly available to meet their needs. For instance, our measurement of the total financial resources of the low-income elderly could be sharpened by valuing public housing and rent subsidies, by replacing the monthly income measure with an annual one, by accounting for taxes, and by including estimates of pension and Social Security wealth in our measure of net worth. Nonetheless, these enhancements would not change the overall profile presented herein that, even after major in-kind benefits and financial wealth are taken into account, the financial resources of a substantial number of elderly persons are so low that they have difficulty in meeting their food and nutritional needs.

Our review and synthesis of the literature on the food choices, eating behavior, and nutritional status of elderly persons was hampered because:

- No recent national data are available on the food consumption and nutritional status of the elderly population;[25] published studies that we reviewed were based largely on the Ten-State Survey, NHANES I, NHANES II, NFCS-LI, and SFC-LI data, and these data sources are currently quite dated (over ten years old).

- The dietary studies that we reviewed to evaluate the nutritional status of elderly persons overwhelmingly relied on data on household nutrient availability, rather than on data on individual intake. Nutrient intake is preferred, since measures of nutrient availability generally overstate actual nutrients consumed.

[25]New nationally representative data on the food consumption and nutritional status of the elderly will be provided by the USDA's 1987-88 Nationwide Food Consumption Survey.

2. The Effectiveness of USDA Programs at Meetine the Food and Nutritional Needs of the Low-Income Elderly

A widely accepted measure of the effectiveness of USDA food assistance programs is the extent to which elderly persons eligible for the programs actually participate.[26] In Section 2.a we examine the extent to which each program and the combination of USDA programs serve eligible low-income elderly and how well the programs serve particular subgroups of low-income elderly.[27] These estimates are based on nationally representative household surveys and program data.

Our analysis in Section 2.a on the participation rates of elderly persons in USDA programs suggests that many of them do not participate in any of the USDA food assistance programs. Thus, in Section 2.b we address this issue by reviewing studies on nonparticipation based on nationally representative and less representative household surveys, and by assessing the results of focus group discussions with 12 groups of low-income elderly.[28] Section 2.c discusses the limitations of the research.

a. Participation in USDA Programs bv Elderlv Persons

This section presents estimates of the participation rates of elderly persons in USDA food assistance programs, separately for each individual program and for the combination of USDA

[26]In addition, the programs must have the impacts on food expenditures and nutrient intake that motivated their implementation. Relatively few studies have examined the measurable impact of food assistance programs on the food expenditures and nutrient intake of the elderly. See Ponza and Wray (forthcoming) for a review of the studies.

[27]Unless stated otherwise, "low-income elderly" continues to refer to persons age 60 or older whose household money income is less than 185 percent of the federal poverty threshold.

[28]Separate focus groups were held with CSFP-Elderly recipients, Title' III congregate-meal participants, Title III home-delivered meal participants, and USDA program nonparticipants in three cities--Detroit, New Orleans, and Los Angeles. In all, 125 low-income elderly participated in the discussions.

programs. We must note at the outset that our reported estimates of participation rates of eligible elderly likely understate the "reach" of USDA programs, since in most cases we are comparing the number of elderly individuals who participate in USDA food assistance programs with the number of elderly individuals who are estimated to be potentially needy. Our estimate of the potentially needy is an overestimate of the eligible population, since many of our potentially needy pool will be neither needy nor eligible.

The Food Stamp Program. The FSP provides low-income households with coupons to be used to purchase food in authorized retail stores. The monthly net incomes of elderly households eligible to receive FSP benefits must be less than or equal to the federal poverty threshold, and, after certain exclusions, their assets cannot exceed $3,000. Using SIPP and Food Stamp Statistical Summary of Operations data, Doyle and Beebout (1988) show that 1,679,000 of the 4,795,000 elderly persons estimated to be eligible to participate in the FSP during August 1984 actually participated in the FSP. Thus, the FSP is reaching at least 35 percent of eligible elderly individuals.

In the focus group discussions (see Section 2.b), one reason cited by many elderly persons for choosing not to participate is the small benefit to which they are entitled. Indeed, of eligible elderly persons not participating in the FSP in August 1984, we estimate that one-half are entitled only to the $10 minimum food stamp monthly benefit. However, 39 percent are entitled to $30 or more in food stamp benefits, and 27 percent are estimated to be eligible for $50 or more.[29]

Comparing the socioeconomic characteristics of elderly FSP participants with those of the population of officially poor elderly persons, we found that the program disproportionately serves

[29]These figures are the authors' calculations based on August 1984 SIPP data. See Doyle and Beebout (1988) for a description of the FSP eligibility analysis file.

elderly persons who live alone, who are black or Hispanic, who have less than a high school education, and who have low incomes and few assets (see Table 4). For example, 69 percent of elderly FSP participants live alone, compared with 54 percent of all poor elderly persons. Thirty-five percent of elderly FSP recipients are black or Hispanic, compared with 25 percent of poor elderly persons. The gross and net monthly incomes of over 87 percent of all elderly FSP recipient households were less than the federal poverty threshold; and the assets of over 95 percent of elderly FSP households were valued at $1,000 or less.

The Title III Congregate Meals Program. The Title III Congregate Meals Program provides prepared meals (served in group settings) to persons 60 years of age or older. No income or other eligibility requirements, other than age, govern participation in the program. According to August 1984 SIPP data, 11.6 million elderly persons age 60 or older had household income of less than 185 percent of the federal poverty threshold and did not have mobility restrictions. Approximately 2.4 million elderly persons participated in the Congregate Meals Program in 1984 (Posner and Krachenfels, 1987). Thus, at least 22 percent of low-income elderly persons without mobility restrictions (2.4 of 11.6 million) participated in the Congregate Meals Program. Participation in congregate meals by eligible unimpaired elderly persons whose household incomes are below the poverty line exceeds that of all low-income elderly persons. We estimate that 34 percent of unimpaired poor elderly persons participated in the Congregate Meals Program in 1984.[30]

Comparing the socioeconomic characteristics of elderly congregate meal participants and low-income elderly persons overall, we found that the program is disproportionately serving those

[30] In 1984, 4.3 million elderly persons had income below the poverty line. Of these, .6 million needed help getting out of their house, leaving 3.7 million poor elderly persons without mobility restrictions who could potentially participate in the Congregate Meals Program. In 1984, 1.25 million poor elderly persons received congregate meals.

TABLE 4
SELECTED CHARACTERISTICS OF ELDERLY USDA FOOD ASSISTANCE PROGRAM PARTICIPANTS AND THE LOW-INCOME ELDERLY

Characteristic	Elderly USDA Food Assistance Program Participants					Low-Income Elderly	
	FSP	Congregate Meals	Home-Delivered Meals	CSFP	TEFAP	Income Less Than 185% Poverty	Income Less Than 100% Poverty
Female	64%	73%	71%	80%	--	67%	72%
Minorities	35	19	15	--	--	18	25
75 Years or Older	36	41	67	35	--	38	36
Completed Less than 12 Grades	07	--	--	80*	--	66	76
Living Alone	69	55	61	60	55	46	54
Income below Poverty Line	07	52	65	75	59	31	100
Employed	9	--	--	1*	6	11	9
Received SSI	53	--	--	29	17	27	45
Received Medicaid	71	18	30	42	--	14	28
Received Food Stamps	100	13	19	29*	20	--	--
Poor/Fair Health	48	25	59	--	--	57	64
Health Worse Than last Year	--	16	36	--	--	--	--
Hospitalized Last Year	24	23	44	--	--	22	23
Gets Out Every Day	--	81	24	--	--	--	--
Rarely/Never Attends Religious Services	--	24	63	--	--	--	--
Never Invites Others to Home	--	23	66	--	--	--	
Able to Maintain Home by Self	81	a9	41	--	--	--	--

SOURCES: Long (1986); Kirschner Associates Corp. and Opinion Research, Corp. (1983): Archdiocese of New Orleans (1984); Focus: HOPE (1984); Quality Planning Corporation and Abel, Daft, and Earley (1987): and authors' tabulations of April and August 1984 SIPP data.

*Indicates that the entry is not based on nationally representative household survey data or program data.

whose income is the lowest (see Table 4). Fii-two percent of Congregate Meals Program participants have money income below the poverty line, compared with 31 percent of low-income elderly persons. The program is reaching subgroups of elderly, such as the older-old and minorities, generally in proportion to their representation in the low-income elderly population as a whole. Forty-one percent of Congregate Meals Program participants are older than age 75, compared with 38 percent of all low-income elderly persons. Nineteen percent of Congregate Meals Program participants are black or Hispanic, compared with 18 percent of all low-income elderly persons.

However, low-income elderly persons who are mobility-impaired, socially isolated, and non-English-speaking have been shown to be disproportionately underrepresented among Congregate Meals Program participants (Kirschner Associates, Inc., and Opinion Research Corp., 1983; and Balsam and Rogers, 1988). For example, only 11 percent of the participants are mobility-impaired (that is, cannot go outdoors without some difficulty/without help), whereas 19 percent of all low-income elderly persons experience difficulty in getting outside. Moreover, several subgroups of low-income elderly persons, such as the homeless, those residing in single-room occupancy dwellings, those who have suffered abuse and neglect, and those who are alcoholics and substance abusers, are unserved or underserved by the Congregate Meals Program (Balsam and Rogers, 1988).

Some evidence also suggests that many elderly participants could benefit by having more meals available. Nationwide, only 19 percent of Congregate Meals Program sites offer either breakfast or supper options in addition to lunch. Only 17 percent of the sites offer weekend congregate meals. Only 13 percent of the sites provide nutrient supplements to elderly persons who could benefit from them (Balsam and Rogers, 1988).

The Title III Home-delivered Meals Program. The Title III Home-delivered Meals Program provides meals to persons age 60 and older who are homebound due to disability, illness, or isolation. As with congregate meals, no income requirement exists for participation. Precise estimates of the number of low-income elderly persons who are homebound are extremely difficult to obtain. Based on 1984 SIPP data, about 1.6 million low-income elderly persons report that they need help getting outside. Approximately .5 million low-income elderly persons participated in the Home-delivered Meals Program in 1984 (Posner and Krachenfels, 1987). Thus, at a minimum, 31 percent of functionally impaired low-income elderly persons who are potentially eligible to participate in the Home-delivered Meals Program actually participate. Participation in the program by eligible functionally impaired poor elderly persons is greater than the participation of all low-income impaired elderly persons. We estimate that 54 percent of impaired elderly persons whose household income was below the poverty line received homedelivered meals in 1984 (that is, .325 of .6 million poor elderly persons).

Comparing the characteristics of Home-delivered Meals Program participants and the low-income elderly overall, we found that the program disproportionately serves the lowest-income elderly, the older-old, and the mobility-impaired. Sixty-five percent of Home-delivered Meals Program participants have household income below the poverty line, whereas less than one-third of elderly persons who need assistance in getting outside have household income below the poverty line. Sixty-seven percent of the participants are older than age 75, compared with 38 percent of low-income elderly persons. Seventy-two percent of the participants are mobility-impaired, whereas 19 percent of all low-income elderly have difficulty in getting outside.

However, low-income elderly minorities and low-income elderly who are socially isolated appear to be underrepresented among Home-delivered Meals Program participants (Kirschner

Associates, Inc. and Opinion Research Corporation, 1983; and Balsam and Rogers, 1988). For example, 15 percent of the participants are members of minority groups, compared with between 18 and 25 percent of all low-income elderly persons, depending on the definition of low income used.

As is true of congregate meals, many participating elderly could benefit from the availability of meals on weekends and from more than one meal per day. Nationwide, for example, only half of the meal programs offer home-delivered meals on weekends and thus do not serve many elderly persons who need weekend meals. Only 22 percent of the sites provide more than one home-delivered meal per day (Balsam and Rogers, 1988).

The Temporary Emereency Food Assistance Program. TEFAP provides surplus commodities to low-income households that must meet a means test to participate in the program. The upper limit on income ranges from 125 to 185 percent of the poverty line, but most states use either 130 or 150 percent. According to August 1984 SIPP data, 9.8 million elderly persons live in households whose income is less than 150 percent of the federal poverty level.[31] Approximately 3.3 million elderly persons received TEFAP commodities in 1986 (Quality Planning Corporation et al., 1987). Thus, TEFAP is reaching at least one-third of all low-income elderly persons who are eligible for food assistance. The participation rate of poor elderly persons in TEFAP is considerably higher: 45 percent of elderly persons whose income was below the federal poverty threshold participated in TEFAP.[32] An examination of the household income of elderly TEFAP

[31]While income limits currently range between 125 and 185 percent of the poverty line, we use 150 percent to define the potential pool of elderly persons, since the majority of states use either 130 or 150 percent of poverty as the income limit.

[32]Of the 4.3 million elderly persons whose money income was less than 100 percent of the federal poverty line, 1.95 million received TEFAP commodities in 1986.

participants shows that 59 percent had income below poverty, and 84 percent had income below 130 percent of the poverty threshold.

The Commodity Supplemental Food Program. The CSFP distributes food commodity supplements monthly to low-income households at nutritional risk, primarily women, infants, and young children, but also elderly persons. The household income of elderly persons must be at or below 130 percent of the poverty line. The elderly component of CSFP, however, does not serve much of the potentially eligible low-income elderly population. The program operates only in 12 states, serving just 83,103 low-income elderly persons in 1988. Seventy-five percent of elderly CSFP recipients have money income below the federal poverty line.

The Combination of USDA Programs. The federal income maintenance system includes a wide variety of transfer programs (social insurance and need-tested) that constitute a type of safety net for the low-income population. The system is designed to provide multiple programs to serve the needs of specific types of individuals and to supplement each other. Thus, the more policy-relevant measure of how well USDA programs meet the food and nutritional needs of low-income elderly persons is the proportion of eligible low-income elderly who are served by the combination of available programs.

As shown in Table 5, the FSP served 1.7 million elderly persons in August 1984; 2.9 million elderly persons participated in Title III meals in August 1984, 3.3 million elderly persons participated in TEFAP in October 1986, and 83,000 elderly persons participated in CSFP-Elderly in 1988. If no multiple program participation occurred and these participation numbers could be summed, nearly 8 million ‘elderly persons would have participated in the major USDA food assistance programs. The eight million would produce a coverage rate of at least 60 percent (7.98 million participants divided by 13.2 million low-income elderly persons).

TABLE 5

POTENTIAL AND ACTUAL NUMBERS OF LOW-INCOME ELDERLY SERVED BY USDA FODD ASSISTANCE PROGRAMS

	Potential Caseload			Actual Caseload									
				Food Stamp Program		Congregate Meals		Hone-Delivered Meals		TEFAP		CSFP	
Subgroup	Fbney Income Less Than 100% Federal Poverty Line[a]	FSP Eligible	Money Income Less Than 185% Federal Poverty Line[a]	Poor Elderly	All Elderly	E l &	ATT Elderly	Poor Elderly	All Elderly	Poor Elderly	All Elderly	Poor Elderly	All Elderly
All Elderly	4,266,885	4,795,000	13,238,090	1,460,730[c]	1,679,000[b]	1,248,000[g]	2,400,000[f]	325,000[h]	500,000[f]	1,947,000[i]	3,300,000[k]	67,328"	83,103[m]
Black or Hispanic	1,091,298	—	2,400,094	555,077[d]	604,440[e]	237,100[j]	456.d	48,750[j]	75.d	—	—	--	—
Needs Help Betting Outside	597,364	--	1,588,574	—	—	--	—	--	—	--	--	—	—

NOTE: Elderly persons 60 years old and over. Poor elderly are persons 60 years old or older with household lncoms less than the federal poverty threshold.

[a]Potential caseload numbers are from the authors' tabulations of SIPP 1984 April extract, end Doyle and Beebout (1988).

[b]Doyle and Beebout (1988).

[c]FSP Program Data: 87% of elderly FSP partlclpents have income below the federal poverty line.

[d]1984 SIPP Data: 38% of elderly FSP participants with income below 100% of poverty are black/Hispanic.

[e]1984 SIPP Dete: 36% of elderly FSP participants with income below 185% of poverty are black/Hispanic.

[f]1984 National Data Base on Aging, Posner and Krachenfels (1987).

9522 of elderly congregate-meal recipients are poor (Kirschner Associates, Inc. and Opinion Research Corp., 1983).

[h]65% of elderly hose-delivered meal recipients are poor (Kirschner Associates, Inc. and Opinion Research Corp., 1983).

[i]19% of elderly congregate-meal recipients are from minority groups (Klrschner Associates, Inc. and Opinion Research Corp., 1983).

[j]15% of elderly home-delivered meal recipients are from minority groups (Kirschner Associates, Inc. and Opinion Research Corp., 1983).

[k]Quality Planning Corp. and Abel, Deft, and Earley (1987).

'59% of elderly TEFAP recipient households had income less than the poverty llne (Quality Planning Corp. and Abel, Daft, end Earley, 1987).

[m]CSFP program data.

[n]CSFP program data: 75% of CSFP recipients have income of less then $5,000/year.

However, many low-income elderly persons participate in more than one USDA food assistance program, although the exact number is uncertain, since the data on multiple program participation are limited. If, for example, as many as one-quarter of the 8 million low-income elderly USDA program participants received benefits from more than one program (our best estimate based on available data), then the lower-bound estimate of the proportion of low-income elderly persons served by the combined USDA food assistance programs would fall from 60 to 45 percent.

b. The Reasons for the Nonparticipation of Elderly Persons in USDA Programs

Since many seemingly eligible low-income elderly persons do not participate in USDA food assistance programs, an important question is, why not? Although due to data limitations we were unable to tabulate the percentage distribution of the reasons that elderly persons do not participate, our examination of the nonparticipation issue indicated that elderly persons are not participating in available USDA programs for the following reasons:

- Ineligibility. Many elderly persons do not meet eligibility requirements--that is, they have too much income or net worth to qualify for the FSP, TEFAP, or CSFP, or they are not sufficiently disabled to receive home-delivered meals.

- Informational problems. Many elderly persons are either totally unaware of specific or all USDA food assistance programs, or they are generally aware but lack sufficient specific information about the availability, eligibility requirements, and enrollment procedures of the programs.

- Self-perceptions that they do not need the services provided by these programs, or that others need the benefits more than they, or preferences to rely on their family as opposed to public agencies.

- Program features, including the ease of enrollment, the accessibility of the benefit, how the type of benefit fits their needs, and the qualitative aspects of the benefit.

In terms of program features, focus group discussions with low-income elderly persons indicated that, while they would like the food-purchasing flexibility provided by coupons, they perceived that the FSP application and issuance processes for food stamps were a significant barrier to participation. Many of the elderly persons who do not participate in the FSP reported that they were aware of their eligibility, but had compared the benefit that they would receive (often the $10 minimum) with the cost of traveling to the certification and issuance offices and decided that the benefit was not worth the cost.

Congregate meals would appeal to those who enjoyed the social aspect of the meal in addition to receiving a balanced, nutritious meal. However, the location of some sites was considered to be inconvenient or unsafe and thus a barrier to participation. Better services (that is, better-tasting meals) or a greater amount and a wider range of recreational and social activities would attract participation. The elderly generally preferred the relatively simple enrollment procedures of the food distribution programs. However, standing in long lines for food packages and having to carry large and heavy food packages home were cited as barriers to participation.

c. Limitations of the Research

Although the results of our research are revealing, they are subject to several limitations that must be addressed in the future in order to assess more definitively how well existing USDA food assistance programs meet the food and nutritional needs of elderly persons and to determine the reasons for their nonparticipation:

- No nationally representative data set contains information on participation in each USDA food assistance program available to elderly persons; thus, we could not accurately account for substitution among programs and multiple program participation when we assessed, respectively, how well each USDA program reaches its target population and how well programs together serve the low-income elderly who need food and nutrition assistance.

- Existing data sets generally ask respondents only about whether or not they are in fact participating in USDA programs, and not about the frequency or intensity of their participation. A more comprehensive measure of how well programs meet the needs of the eligible low-income elderly target populations would take these two dimensions of participation into account.[33]

- Focus groups; while a useful research tool, do not necessarily yield representative data.

- Although the number of focus groups was constrained by the scope of the project, a shortcoming of this aspect of the research was the lack of separate focus group discussions with FSP participants in each city. In particular, since we did not hold separate focus group discussions with food stamp recipients, information on the reasons for nonparticipation may represent an unbalanced view of the FSP.

C. IMPLICATIONS OF THE RESEARCH

Our tabulations of SIPP data have shown that, compared with the high-income elderly, low-income elderly persons exhibit higher rates of functional impairment and chronic illness, and are more likely to be living alone, to be older, and to be less educated. Each of these factors is associated with an increased "risk" of poor nutrition. Unlike the high-income elderly, the low-income elderly have few financial assets with which they can supplement their incomes. Although a substantial proportion of low-income elderly persons (63 percent) own their homes, their average accumulated equity is about $26,000, or an amount equal to what is currently estimated as the cost of one, or possibly two years, of nursing-home care. Valuing the major in-kind benefits received by elderly persons-energy assistance, food stamps, Medicare, and Medicaid--increases the economic resources available to the low-income elderly, but large numbers of elderly persons would still not have adequate financial resources to obtain a sound diet_

[33]For example, a better indicator of the effectiveness of home-delivered meals would be to compare the number of meals actually received during the year with the potential number of meals needed (say, 365 meals times the number in the target population).

Our analysis of SIPP data also showed that the low-income elderly are socioeconomically heterogeneous. While as a group they have a high prevalence of functional impairment and chronic disease, as well as few assets, low-income elderly persons comprise several diverse groups who exhibit different financial situations, health circumstances, and functional limitations, and hence, food assistance needs. Our research confirms that USDA-FNS is responding to the diverse needs of different groups of the low-income elderly by offering an equally diverse set of programs for providing assistance--for example, coupons that can be redeemed for food items, food packages of largely staple commodities, and prepared meals either served in communal settings or home-delivered.

Many of the food assistance programs offered by USDA-FNS serve both the low-income elderly and nonelderly populations. Our research shows that, while the low-income elderly and nonelderly populations share some common characteristics, the low-income elderly are significantly worse-off in terms of their health and functional ability, and they are more likely than the low-income nonelderly to live alone. Thus, food and nutrition programs that serve both populations must take into consideration the special circumstances of the elderly, such as restricted mobility, mental disabilities (for example, forgetfulness and confusion), mental stress, and isolation.

USDA food assistance programs that are available to both groups do generally offer features that take into consideration the special circumstances of the elderly. For example, some TEFAP and CSFP-Elderly commodity distriiution sites deliver pre-packaged commodities to the homebound elderly or set special distribution hours for elderly persons. In the FSP, applications may be accepted by telephone or via in-home interviews, elderly persons may designate authorized representative-s to pick up their food stamp benefits for them, and in some localities food stamp coupons are issued by mail.

Yet, despite these provisions to improve the access of elderly persons to the FSP, our focus group discussions with the low-income elderly indicated that many of them find it difficult to deal with the FSP application and issuance procedures. Thus, one option that may increase participation in the FSP by elderly persons may be to have a separate case manager available to them to ensure that they follow through with the application process and hence receive benefits. The benefits of this approach would have to be weighed against the cost of providing this extra service, however.

The available literature on the food choices and eating behaviors of elderly persons also suggests that programs that provide food assistance to the elderly may need to stress nutritional education. Due to the deeply established food beliefs and dietary habits of elderly persons, food assistance programs that supplement their food purchasing resources or provide commodities or food directly to them may not in themselves be sufficient to improve the nutrition of many elderly persons unless complementary nutritional education and training are also provided, covering such topics as the types of foods that are appropriate, the size and composition of meals that are adequate, the number of meals that should be eaten, and when meals should be eaten.

Our analyses show that each of the major federal USDA food assistance programs are well-targeted in the sense that a disproportionate share of benefits generally go to elderly persons whose incomes and assets are low. While the programs are generally well-targeted, no program appears to be serving more than half of its respective eligible population. But probably the more policy-relevant measure of how well USDA programs meet the food and nutritional needs of the low-income elderly is the proportion of low-income elderly persons who are served by the combination of available food assistance programs. While the data have serious limitations, we estimate that, when combined, the programs also probably serve no more than half of the low-

income elderly. The proportion of elderly persons served whose income is below the poverty line is probably somewhat higher.

Given current data, what, if anything, can be said about the approximately one-half of low-income elderly persons who are estimated to be eligible for but are not participating in USDA food assistance programs? What percentage of these individuals are in need, yet are 'unserved by USDA programs? What percentage are not participating for "acceptable reasons"--for example, they are aware of the programs but do not believe that they need the benefits, or are receiving help from relatives or friends? Unfortunately, current data do not allow us to decompose elderly persons who are not participating in USDA food assistance programs into the various categories.

Probably the best information on these issues is available for the Food Stamp Program, but even that evidence is limited. For example, according to a 1982 unpublished U.S. Department of Agriculture study cited by the Commonwealth Fund Commission (1987), low-income elderly eligible for food stamps but not participating are not participating primarily because they are unaware of their eligibility. In the focus group discussions, an additional reason cited by many elderly persons for choosing not to participate in the FSP is the small benefit to which they are entitled. Indeed, based on SIPP data, we estimated that nearly one-half of elderly eligible FSP nonparticipants were entitled to the $10 minimum food stamp monthly benefit only. Many elderly persons who are eligible for the FSP (both for large and small benefit amounts) but who are not participating also told us that they were frustrated by the application and verification requirements of the FSP.

It must be emphasized, however, that the latter two of these reasons for the nonparticipation of elderly persons are the result of inherent tradeoffs between program accountability and program accessibility. That is to say, the FSP is targeted toward individuals whose income is below the

poverty line and whose countable assets are less than $3,000, with benefits determined by income and family size. Strict application procedures and verification requirements are in place to ensure that FSP benefits reach eligible individuals only. On the other hand, many FSP-eligible low-income elderly who receive income only from Social Security and SSI are eligible for low amounts of FSP benefits (usually the minimum $10 benefit) and choose not to participate because they feel that the transaction costs of applying for and receiving benefits are not worth incurring.

In short, given the available evidence, the best that we can say is that, since many elderly persons will be neither needy nor eligible, the "reach" of the FSP is in fact higher than the 35 percent participation rate estimated by Doyle and Beebout (1988). For analogous reasons, the estimates of coverage provided by each of the other USDA food assistance programs and the combination of programs should be considered low estimates.

Finally, we estimated that 39 percent of eligible elderly persons who are not participating in the FSP were entitled to $30 or more of food stamp benefits and 27 percent were eligible for $50 or more in August 1984. More aggressive outreach represents one strategy that could be followed in order to reach the unserved elderly who have more than a minimum need. But many FSP-eligible unserved elderly persons are isolated, residing in suburban or rural areas, and are thus difficult to reach. Thus, the cost of reaching them could he high. Moreover, based on the evidence cited above, some nontrivial proportion of those who could be reached will be eligible only for the minimum FSP benefit and may choose not to participate.

Recommendations for Further Research

Based on our assessment of the available information and the current gaps in our knowledge, we recommend that the following research questions be given high priority in subsequent research on the needs of elderly persons and their participation in USDA food assistance programs, to

enable USDA-FNS to assess more definitively how well USDA food assistance programs meet the food and nutritional needs of the elderly population:

- Food Choice and Eating Behavior. What are the food choices of the low-income elderly? What is the intake of selected nutrients (relative to RDAs) by the low-income elderly? What is the eating behavior of the low-income elderly?

- Multiple Program Participation. What is the extent of multiple program participation in USDA food assistance programs? Which programs are most often involved? Is multiple program participation consistent with an appropriate or excessive distribution of benefits for those involved? To what extent are needy low-income elderly reached by the combination of available USDA food assistance programs?

- Participation Trends. What are the participation trends for each USDA food assistance program--increases and reductions in the number and percentage of low-income elderly and low-income elderly subgroups in each program, and shifts in participation from one program to another?

- Participation Dynamics. For each USDA food assistance program, what are the patterns of program participation by the low-income elderly--the duration of participation spells, the frequency of benefit receipt, and the extent of recidivism? What demographic characteristics and circumstances are associated with entry into or exit from USDA programs?

- Impact on Dietary Intake. What is the impact of each USDA food assistance program on the nutrient intake of elderly participants, controlling for selection bias and participation in other USDA food assistance programs?

VII. THE FOOD DISTRIBUTION PROGRAM ON INDIAN RESERVATIONS

Charles Usher

A. INTRODUCTION

The Food Distribution Program on Indian Reservations (FDPIR) was established by the Food Stamp Act of 1977 to provide commodity foods to eligible low-income households who live on or near Indian reservations. In fiscal year 1989, the FDPIR served 138,000 persons per month and had a budget of about $58 million. The remote location of many reservations makes it difficult for a large number of American Indians to reach food stamp offices or, if certified to receive food stamps, difficult to transact them, due to the paucity of food stores and their distance to them. Therefore, under the oversight of the Food and Nutrition Service (FNS), Indian Tribal Organizations (ITOs) and State agencies offer nutrition assistance in the form of commodities to persons who may not be served effectively by the Food Stamp Program (FSP).

FNS requires descriptive information on FDPIR households and program operations to help meet its administrative responsibilities for the program. In addition, data are required in response to a congressional mandate, expressed in the Commodity Distribution Reform Act and WIC Amendments of 1987 (P.L. 100-1), for information on the acceptability and usefulness of commodities to program participants. FNS cooperated with the U.S. General Accounting Office, which conducted an inquiry of four FDPIR programs in various regions of the country. Thus, FNS has called for an evaluation study to meet a diverse set of information needs.

The specific objectives of the evaluation are to:

- Describe the demographic and socioeconomic characteristics of FDPIR households

- Describe the State agency or Indian Tribal Organization (ITO) administration of FDPIR in terms of written policy, reported practice, and estimated costs
- Describe program practices whose purpose is to maximize the efficiency and integrity of the program
- Identify the dietary needs and preferences of low-income American Indians and examine the manner in which the FDPIR addresses them
- Provide a preliminary comparison of the availability and acceptability of the FDPIR commodities versus food stamps for American Indians

The Food Distribution Program on Indian Reservations was developed in response to the special conditions that exist in these areas. However, in most FDPIR service areas it is possible (if not convenient) for American Indians to choose to apply for food stamps rather than commodities. In addition to obtaining information on the rate at which participants switch from one program to the other, we will learn more about the factors that affect their preferences for one program or the other. Thus, FNS will use the information provided by the evaluation to improve the efficiency of FDPIR program operations, and to enhance the ability of the FDPIR and the FSP jointly to help meet the nutritional needs of low-income American Indians.

The objective of this paper is twofold. The first is to describe the research approach that we will follow in conducting the FDPIR evaluation. The second is to present a preliminary conceptual model of FDPIR program operations and their impact on participants.

B. DATA AND RESEARCH METHODS

The evaluation will be based on data that describe FDPIR operational and caseload characteristics at the level of individual programs, and on data that describe the characteristics of American Indian households that participate in the FDPIR or the FSP. To meet the objectives of the evaluation, the research team is collecting household-level data from four sources:

1. A national probability sample of approximately 825 FDPIR case records drawn from approximately 30 programs

2. Interviews with the participants whose case records are selected in the sample

3. A sample of approximately 100 American Indian households that have chosen to participate in the FSP rather than the FDPIR

4. A probability sample of American Indian households whose food stamp case was reviewed in summer 1986 under the Integrated Quality Control System operated by State agencies and FNS

We are developing information on the structure and operation of FDPIR programs from a variety of sources:

- Four preliminary site visits and 2 pretest site visits that have already been conducted, and 15 site visits that will be conducted during the data collection phase

- A series of telephone contacts and exchanges of information with 15 additional FDPIR programs

- A systematic review of fiscal year 1989 plans of operation for all 105 FDPIR programs, and intensive reviews of fiscal year 1990 plans for the 30 programs involved in the evaluation

- The collection and review of management evaluation (ME) reviews by FNS Regional and Field Office staff for each of the 30 programs in the evaluation sample

- A compilation of data from statistical reports routinely submitted to FNS by local FDPIR programs

This approach exploits extant data, but, recognizing their limitations, uses primary data to refine them and to provide supplementary information. This strategy also imposes a lower burden on local officials, whose cooperation is essential to the success of the evaluation.

We will seek additional insights into the characteristics and perceptions of FDPIR and American Indian food stamp households through focus groups. Two groups of FDPIR household representatives were assembled during the preliminary site visits, and another session is planned for such households. We also plan to convene three focus groups of American Indians who participate in the FSP. Our review of the literature on nutritional problems among American Indians helped us identify the key issues addressed in both the focus groups and the household surveys.

C. A PRELIMINARY MODEL OF FDPIR PROGRAM OPERATIONS AND THEIR IMPACT

1. Overview

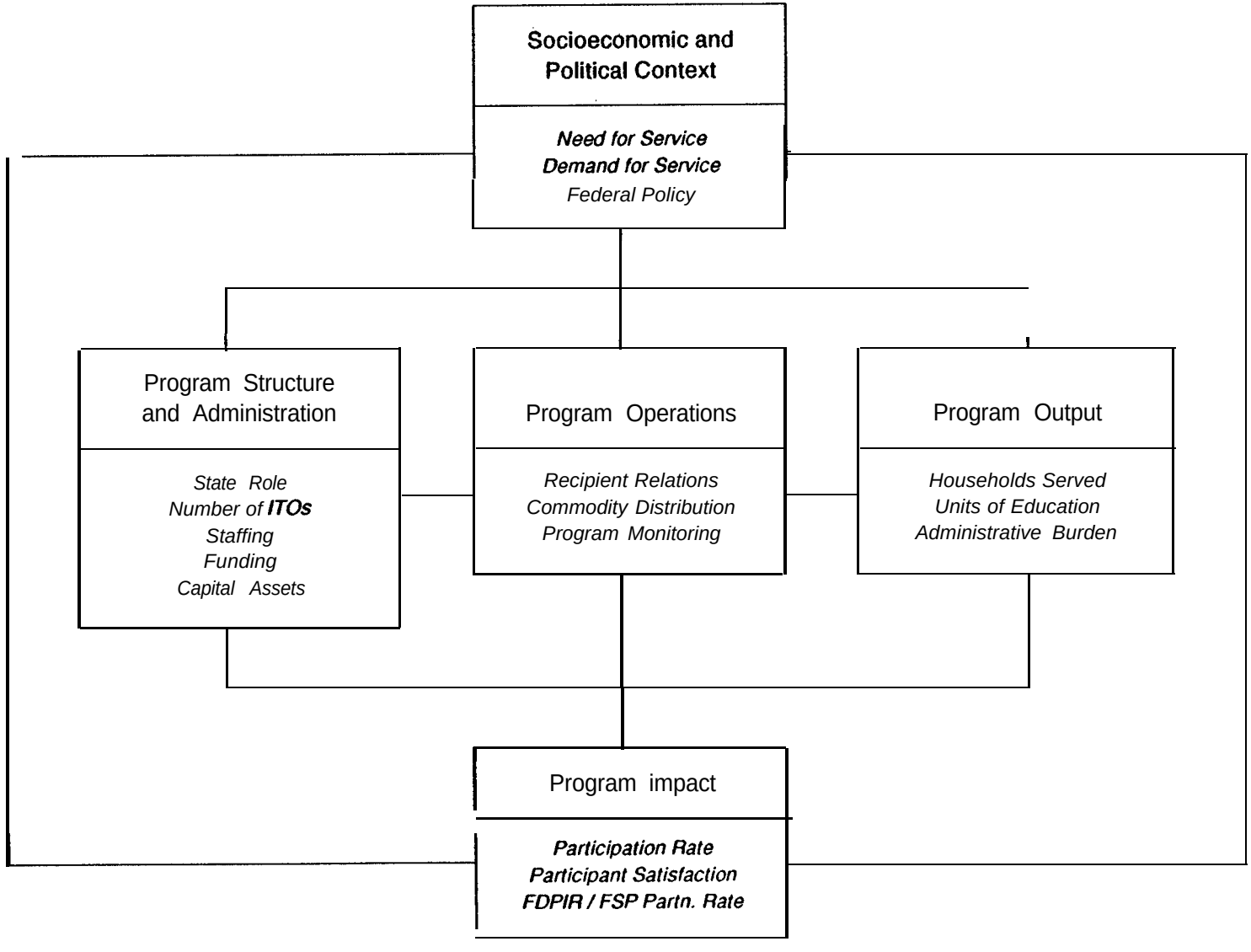
On the basis of our review of plans of operation and visits to six FDPIR programs, we can offer a preliminary model of FDPIR program operations and their impact. Figure 1 summarizes the major components of this model. Using it as a frame of reference, we can describe the context within which individual FDPIR programs are administered and within which the FDPIR affects the nutritional well-being of its target population.

The broad parameters of FDPIR program operations are set by federal policy, which affects and is ultimately affected by the need and demand for nutritional assistance on reservations. The need and demand for such assistance, and other characteristics of reservations and the persons who live on them, first affect whether a program exists in a given area. Then, where programs do exist, their setting has a strong influence on their structure and administrative characteristics.

The setting of a program, its administrative structure, and federal policy affect how it is operated. Our model delineates three functional areas within program operations-recipient relations, commodity distribution, and program monitoring-each of which encompasses several

Figure 1

Preliminary Model of FDPIR Program Operations and Impact



discrete activities. Recipient relations involve outreach, the certification (and recertification) of participants' eligibility, the assessment of food preferences, and nutrition education. Commodity processing includes ordering, warehousing, and distributing commodities. Program monitoring involves the oversight of local activity by federal and state officials, special efforts to control fraud and error (for example, investigating dual participation in the FDPIR and the FSP, pursuing claims against households, etc.), and routine inventory controls. Collectively, these three sets of activities comprise local program operations in the FDPIR.

The most important product of FDPIR activities is service in the form of commodities distributed to American Indian households that are deemed to be eligible. Some measurable number of households also gain a direct benefit from nutrition education, but other activities generate only indirect benefits for an indeterminate number of persons. Measurable program outputs provide a basis for constructing indices of efficiency.

The immediate impact of the FDPIR is apparent in the rate of participation by eligible households, and their satisfaction with the commodities they receive. It is not within the scope of this evaluation to assess the impact of the FDPIR in terms of ameliorating the significant nutrition-related health problems that exist among American Indians. Such an assessment would be complicated by the fact that the FDPIR is a supplementary food program, and not the sole source of food for participants. Moreover, the impact of the FDPIR is mitigated by powerful social and economic forces that impinge on American Indians. Nevertheless, over the long term, we would expect the impact of the program to have a feedback effect on the future needs and demands for nutritional assistance on Indian reservations.

In the following sections, we discuss each of the major components of the model presented in Figure 1. We begin by describing the socioeconomic and political context within which the FDPIR is administered.

2. Socioeconomic and Political Context

The broad parameters of FDPIR policy were established in the Food Stamp Act of 1977 and other legislation, such as the Commodity Distribution Reform Act (P.L. 100-237). FNS translated this legislation into the administrative regulations under which it exercises its oversight responsibility. Federal legislation and regulations set a tone that can affect the operation of local programs. The focus groups and our discussions with FNS Regional officials indicated that some American Indians and some federal administrative staff view the FSP and FDPIR as having very different styles of operation, with the FSP using a more rigorous certification process. To the extent that it actually exists, this difference in style may have a bearing on participation rates.

The need and demand for nutritional assistance on Indian reservations stem from a variety of factors. These same factors also affect how such assistance is provided. One set of factors is sociodemographic. For example, although variation in economic conditions makes the relationship imperfect, the size of the American Indian population on a reservation and in nearby areas has the greatest bearing on the basic size of a program. Tribal diversity and intertribal compatibility within a given area might also affect the level of cooperation among tribes and their willingness to follow an administrative model in which several tribes band together to operate a program. Population trends arise from a variety of factors. For example, the increased availability of public housing on one reservation has prompted a noticeable degree of reverse migration of American Indians from the San Francisco area.

Chronically high levels of unemployment on Indian reservations is one reason for the existence of the FDPIR. Thus, it is essential that the model include a set of economic factors. Local economic conditions, and the nature and extent of joblessness, can affect the need and demand for nutrition assistance. For example, seasonal employment and irregular employment (such as fighting fires in Yellowstone Park) affect the level and time pattern of earnings for American Indian households, and thus their need for assistance. Over the longer term, the economic development initiatives undertaken by IT0 leaders also affect employment prospects.

Geography also has an effect on the need and demand for nutritional assistance, as well as how such assistance is provided. The area of a reservation and the dispersion of the population across it affect how services are delivered (for example, the distribution of commodities from the tailgate of a large truck rather than at a central warehouse). Many tribes are based in Oklahoma, for example, and many American Indians live in that state, but they tend to be widely dispersed because reservations do not exist. Moreover, where reservations do exist, their proximity to urban areas and services may affect the demand for FDPIR commodities, in that the availability of grocery stores and a wide variety of foods may create a greater demand for food stamps than for commodities. Climate and terrain can affect the ability of households to produce their own food by gardening or raising livestock

Among the other factors that create the need for nutrition assistance are special health problems. Our review of the literature indicated that certain nutrition-related health problems, such as diabetes, hypertension, and obesity, are pervasive among American Indians. To the extent that such problems are recognized and addressed on a reservation (for example, through the Indian Health Service, WIC, the Extension Service, or other agencies), FDPIR officials may be addressing this need through nutrition education efforts.

3. Program Structure and Administration

Our review of plans of operation and our site visits have indicated that the administrative structure, staffing, funding, and capital assets of FDPIR programs vary widely. These important dimensions of program structure and administration are influenced by the setting of a program, and they create an organizational context within which it operates. Thus, it would be useful to be able to develop a typology of programs to help summarize and describe the organizational context of FDPIR program operations.

One of the most important findings from our site visits pertains to the structure of FDPIR programs in terms of the roles of states and ITOs. FNS classifies five FDPIR programs as state-administered--Montana, Nevada, **North Carolina, North** Dakota, and South Dakota. During our preliminary site visits, however, it became apparent that these states are not directly involved in certifying households to receive FDPIR commodities, or in distributing commodities to households. Instead, they play an oversight role similar to FNS Regional or Field Offices, and provide central warehousing for foods received from FNS and transferred to local reservation warehouses.

On the basis of our site visits, our review of plans of operation, and our discussions with FNS staff in each Regional Office, there appear to be three basic models of state-administered programs:

Model 1

In Montana, North Dakota, and South Dakota, a division of state government exercises general oversight for the program, provides central warehousing for commodities ordered from USDA, distributes food to reservation warehouses, and works with five to seven tribal governing bodies whose staff certify the eligibility of individual households and distribute food to certified households.

Model 2

In North Carolina, the State agency works with a single reservation on which a FDPIR warehouse is located, and the staff of the tribal governing body perform certification and distribution.

Model 3

In Nevada, the state administers the program directly. Households on ten reservations participate in the program, but tribal governing bodies are not involved in the administration of FDPIR (except in relatively minor roles, such as providing volunteers or temporary paid workers to help with tailgate distribution). As in South Dakota, other ITOs administer FDPIR programs in Nevada that are independent of the state.

With the exception of Nevada, the state FDPIR agency in these five states plays only an oversight and advisory role that is similar to the role of FNS Field Offices where the program is operated by an ITO. The only difference is that Montana, North Dakota, and South Dakota provide central warehousing from which commodities are sent to reservation warehouses for distribution to FDPIR households. In all cases except Nevada, individual tribal governing bodies in state-administered programs have responsibilities that are very similar to those of ITOs that operate the program independently (that is, certifying households, ordering and distributing commodities, and managing warehouses). Again, the key distinction is that a State agency, not FNS, provides direct oversight.

Given the relative independence of the programs administered by tribal governing bodies under state supervision, it is appropriate that, for the purposes of this study, such programs be treated as the equivalents of ITOs that operate independently of a State agency. Thus, 105 programs are operating in the United States, and they tend to fit into one of the following categories:

- 86 programs administered independently of a State agency by one or more

- One program administered directly by a state (Nevada)
- One program administered by a single tribe under contract with a state (North Carolina)
- 17 programs administered by ITOs under contract with a state (Montana, North Dakota, or South Dakota)

Among the 86 programs administered independently by ITOs, further variation exists in terms of the number of ITOs involved, and the role of each IT0 when a consortium is involved. In several programs, several ITOs are cooperating in the administration of a program. The evaluation team visited one, and several are included among the 30 sample programs. A closer examination of each program in the sample is likely to reveal even more interesting details about the structure of such programs.

As shown in Table 1, the two dimensions of state government involvement and the nature of IT0 involvement help define the broad parameters of a typology of FDPIR programs. At this

TABLE 1

A PRELIMINARY TYPOLOGY OF FDPIR PROGRAM STRUCTURE

Nature of IT0 Involvement	State Government Involvement		
	None	Direct Administration	General Oversight
None	A	B	C
Single IT0	D	E	F
More Than One	G	H	I

point, we believe that some types of programs defined by this paradigm probably do not exist (for example, E and H), and others cannot exist (that is, A and C). Given that Nevada may be the only state that fits type B, the most interesting refinements of the typology to be undertaken are, first, to compare single- with multiple-IT0 programs, and, second, to compare programs that involve state government oversight with those in which states are not involved. We are obtaining the information necessary to make these refinements through site visits and other contacts with the staff of the 30 programs in the evaluation sample.Our site visits also revealed the wide variation in staffing patterns. For example, volunteers and other unpaid workers seem to play an important role in many programs. Work-release prisoners and persons sentenced to perform community service in lieu of a jail sentence help in the program on the Blackfeet reservation, and their labor is counted as an in-kind contribution to the local matching funds requirement. In addition, some staff in some programs are involved in programs other than the FDPIR (for example, TEFAP and other commodity programs), and the cost of their time is allocated accordingly. Thus, an accurate understanding of the structure of a program and the resources required to operate it requires a careful depiction of staffing.

One of the factors that affects the structure and operation of local FDPIR programs is funding.ility of an ITO or group of ITOs to meet the requirement for local matching funds is affected by the ability of each tribe to pay (approximately one-third of all FDPIR programs are unable to meet the 25 percent matching requirement). In turn, the availability of funds that exceeded minimal matching requirements can provide human and physical resources for some programs that officials elsewhere would view as luxuries. An accurate understanding of the financial status of a program will require an in-depth examination of its funding arrangements and, more generally, the financial status of the sponsoring ITO(s).

Our site visits also provided insight into the importance of capital eauinment and physical resources in operating a FDPIR program. Local officials must have office space, warehouse space (refrigerated and other storage space), and heavy equipment, such as forklifts and trucks. The availability and condition of such assets will affect the full range of program operations. For example, a tailgate distribution system can be operated only if reliable trucks are available. Similarly, a conveniently located and efficient administrative office will improve the accessibility of the program and encourage participation. And we have seen how the use of computers (both mainframe and microcomputers) can reduce the burden of tracking commodity inventories. Thus, we are identifying these assets for each program in the sample and assessing how they affect the operation of the program.

4. Program Operations

Again, FDPIR program operations encompass three broad sets of activities: recipient relations, commodity distribution, and program monitoring. The manner in which each activity is conducted is affected by the setting of a program and the administrative structure of that program. Each activity also has a direct bearing on the efficiency and effectiveness of local FDPIR programs. Thus, it is important that we learn as much as possible about how each program in the sample performs each of the activities within these broad functional areas.

a. Recipient Relations

The activities within recipient relations entail conducting outreach, assessing the food preferences of program participants, certifying households to receive commodities, and providing nutrition education. Certification is a central component of all FDPIR programs, and a required activity; however, the aggressiveness with which this process is approached varies among programs.

For example, some programs located on reservations routinely verify whether a household has an account at the local bank, whereas others accept the applicant's statement about household assets. Another program asks applicants with no apparent means of support to register with the Employment Service as a way to verify their unemployed status.

We expect to find much more variation among programs in terms of how they carry out other activities under the area of recipient relations. Information obtained from the focus groups and from other contacts during the site visits suggests that many persons on reservations are aware of FDPIR. Consequently, some program managers feel that it is unnecessary to invest limited resources in an extensive outreach program. Nevertheless, some programs, particularly those on larger reservations, find it necessary to undertake publicity campaigns periodically to ensure awareness among persons as conditions and the population of the reservation change.

The nutrition education provided through the FDPIR ranges from simple demonstrations of the use of new commodities and cookbooks that focus on using commodities in the FDPIR package to efforts to inform persons with specific nutrition-related health problems (such as diabetes or hypertension) about the special preparation of FDPIR commodities. It appears that local programs often rely on the expertise of staff from the Indian Health Service, the WIC program, or the Agricultural Extension Service, rather than having a nutritionist on staff. Although it may reflect a lack of financial resources, this cooperative arrangement is probably a cost-effective way to obtain this type of assistance.

A final area of recipient relations involves the assessment of food preferences among program participants. Local FDPIR officials recognize, first, that they will be more successful if they provide commodities that have the greatest appeal to their clientele, and, second, that FNS is now requiring that they conduct formal surveys of food preferences. The officials whom we met

in the preliminary site visits seemed to be very comfortable in judging preferences "by the seat of their pants." Several expressed very strong opinions about the preferences that they perceived among FDPIR participants (a dislike of whole wheat flour, a strong preference for pinto beans, and so on), and based their commodity orders on those perceptions. Nevertheless, all recognized that a survey of food preferences is necessary, and are trying to meet that requisite, primarily by administering the form suggested by FNS among nonprobability samples of participants.

b. Commodity Distribution

The commodity distribution process involves four stages: the purchase and distribution of commodities by USDA; orders of commodities by local programs based on perceived food preferences and available inventory; the warehousing of commodities received from USDA; and the distribution of commodities each month to households certified to receive them. The Agricultural Stabilization and Conservation Services (ASCS) and the Agricultural Marketing Service (AMS) of USDA are responsible for purchasing commodities and distributing them to individual FDPIR programs. FDPIR program managers submit their orders to FNS Regional officials, who transmit them to USDA warehouses in Kansas City, Kansas; Exeter, California; and Kent, Washington.

The process of ordering commodities from USDA and maintaining a sufficient stock to meet the needs of local participants appear to be based on recent trends. These trends are affected by the level of participation in recent months, the commodities being offered by USDA and the perceptions of local program directors (or other staff) about food preferences. In a broader sense, the process must respond to the requirement that each household be offered a certain amount of food from each of several groups within the FDPIR package. The test of the

effectiveness of a program at ordering USDA commodities is whether each household has access to a variety of items within and across the FDPIR food groups.

Each program must have space to store the commodities that it receives from USDA and distributes to FDPIR participants. It is possible that the available space (refrigerated and nonrefrigerated) can be compared with the caseload to provide an index of warehousing capacity. It also is useful to know whether more than one warehouse is available, since it might affect the choice of distribution systems by a program. For example, if a program served a large area and had more than one warehouse, it might be possible to limit the use of tailgate distribution without limiting accessibility for participants.

We have observed two different distribution systems-tailgate (a truck travels to distribution points away from the warehouse to meet participants) and manual (pickup at a central warehouse). The operation of warehouse distribution sites varies somewhat, in that some are "self-service" (participants use shopping carts to select items), while in others FDPIR staff retrieve items for participants. Some programs do not use one system exclusively, but distribute commodities according to special needs (for example, having nearby participants come to the warehouse, but providing tailgate service to persons who live in remote areas). What is most important about this aspect of program operations is that each program attempts to enhance accessibility by minimizing the necessity for FDPIR participants to travel long distances to apply for and receive commodities (it appears that the certification process is also affected by the clistriiution system, in that applications and recertifications are routinely processed at tailgate distribution sites).

c. Program Monitoring

Monitoring encompasses a broad set of activities intended to maintain the integrity of the program. They include efforts by local programs to prevent households from receiving food stamps

and FDPIR commodities simultaneously (dual participation), to maintain appropriate commodity inventory controls, and to pursue claims against participants who should not have received commodities. Program monitoring also encompasses efforts by staff in FNS Regional and Field Offices and in State agencies to review local program operations.

Officials in every program that we have visited obtain a monthly list of households that have received food stamps from nearby welfare offices. It appears that certification specialists routinely check this list, or call if they feel that the list is not up-to-date, to ensure that FDPIR applicants are not currently receiving food stamps. However, it may be the case that some programs and cooperating State agencies go further, by conducting computer matches or using some other means to provide even more control.

The integrity of a local FDPIR program could also be undermined if commodities were diverted to inappropriate uses by persons other than program participants. To avoid such problems, each program must monitor its warehouse stock, the flow of commodities into it from USDA, and the flow of commodities out to FDPIR households. They are monitored through two types of inventories--a physical inventory and a perpetual inventory. Whereas the physical inventory involves an actual count of items, the perpetual inventory tracks the distribution of commodities to FDPIR households, damages to goods, and the use of a small amount of commodities for special purposes (for example, nutrition education demonstrations). FNS is supporting the development of software and providing matching funds for local programs to purchase computer equipment in an effort to automate this process. Our contacts with FDPIR staff who rely on computers to maintain the perpetual inventory suggest that automation relieves them of a time-consuming and tedious responsibility.

When local FDPIR officials determine that a household has received commodities to which it was not entitled, they must attempt to obtain compensation from that household. It appears 'that such cases occur infrequently, but that most agencies do eventually encounter them. Such cases are sometimes handled informally, but in other cases FDPIR must seek financial compensation over several months. It may be the case that agencies that are more diligent in verifying household circumstances and monitoring dual participation are more likely to be aggressive at pursuing claims; however, that remains to be seen.

A final area associated with program monitoring pertains to the oversight of local FDPIR programs by FNS and state officials. We discussed earlier how the oversight function differs according to the administrative structure of a FDPIR program. However, all programs are subject to annual Management Evaluation (ME) reviews by FNS Regional or Field Office staff, and each program operated by an ITO in a State-sponsored program is subject to regular oversight by the staff of the State agency responsible for the program. Thus, the entities that perform the oversight function, the number of different agencies that are involved, and the type of feedback on performance that is provided to local programs all vary. Depending on how the oversight function is carried out, local FDPIR officials may feel a weaker or stronger sense of accountability for how they operate their program.

5. Program Output

The most obvious product of local FDPIR program operations is the provision of commodities to eligible households. The number of participants is a function of the outreach efforts of a program, local economic conditions, the accessibility of program facilities, and all the other factors discussed earlier. However, the absolute level of participation is not very informative, because it does not take these factors into account. Thus, as we discuss in the next section, we

are generating relative measures of participation (such as the population of the reservation) to facilitate comparisons of output among the 30 sample programs.

Nutrition education can be measured in terms of the number (or proportion) of participating households that are provided with demonstrations, copies of cookbooks, or some other type of information. To the extent that such services are provided, participants may make better use of the commodities that they receive. This effect of nutrition education may become apparent in the household survey data on food storage and preparation, and in other measures of satisfaction. Administrative activities in a local FDPIR program are not products in and of themselves. However, to the extent that such activities detract from direct service delivery, they must be measured and evaluated as relatively efficient or inefficient. One of the goals of administrators, such as FDPIR program managers, is to **minimize** the administrative burden required to deliver services effectively. Measuring the cost of administrative overhead relative to the cost of direct services will be one approach for assessing the administrative efficiency of programs.

6. Impacts of Program Operations

Whereas program outputs deal (at least indirectly) with the efficiency of program operations, program impacts pertain to the effectiveness and equity of program operations. For example, the number of participating households becomes more meaningful once it is compared with participation levels in the previous month through a time series analysis, or is viewed as a proportion of the number of persons who live on the reservation. Further insight can be gained by examining such ratios across programs in different types of socioeconomic settings. Each construct incorporates a comparison that evaluates program output against the conditions that they are intended to address (that is, participation versus need).

Although participants in public programs tend to offer positive appraisals of the services they receive, participant satisfaction is useful in determining the future demand for the program. More specifically, satisfaction with the manner in which the FDPIR is administered and with FDPIR commodities will partially determine the rate at which American Indians participate in the FDPIR as opposed to the FSP. Thus, the relative effort required to receive benefits under each program, satisfaction with the benefits received (nonperishable commodities versus vouchers), and the perceived value of benefits will combine to push program preferences in one direction or the other, perhaps changing as other circumstances change.

D. PLANNED ANALYSES

This paper describes the approach that will be followed to evaluate the operation and impact of the Food Distribution Program on Indian Reservations (FDPIR). The conceptual model that we have presented is based primarily on six site visits conducted during the planning phase of the evaluation. Our model will be refined and detailed findings from the evaluation will be presented after additional data are collected and analyzed in the spring of 1990.

One of the primary objectives of the evaluation pertains to the relationship between the FDPIR and the FSP. The FDPIR was developed partly in response to a concern that the need of some American Indians for nutrition assistance could not be met effectively by the FSP. This study will yield new information on the perceptions of this group about the relative benefits of these programs, as well as on some of the transaction costs associated with their participation in them. The study will inform future policy pertaining to the FDPIR and the FSP, and help ensure that these programs are integrated effectively so that they jointly achieve the optimal impact on the nutritional well-being of this special population.

VIII. EVALUATION OF THE FOOD STAMP EMPLOYMENT AND TRAINING PROGRAM: A PRELIMINARY LOOK AT PROGRAM IMPLEMENTATION

Michael Puma and Alan Werner

A. INTRODUCTION

As part of the Food Security Act of 1985 (P.L. 99-198), Congress required that by April 1, 1987, all states implement an Employment and Training (E&T) Program for able-bodied food stamp recipients to help them obtain paid employment and reduce their dependence on public assistance programs. FNS is conducting an evaluation of the E&T Program to achieve four major objectives:

- To describe the E&T Program planned and operated by the states
- To assess the implementation of the E&T Program
- To measure the impacts of the program on the employment and earnings of participants and their need for public assistance
- To measure the cost and cost-effectiveness of the E&T Program

This report is based on interim findings from the study and focuses on how E&T Programs have been planned and operated and on the characteristics of E&T program participants. The results of the complete impact evaluation will be available to Congress by early 1990.

B. BACKGROUND

1. Previous Research

Previous research on Food Stamp Program (FSP) work requirements has been somewhat mixed. Several studies, including Evans, Friedman, and Hausman (1976) and the U.S. General Accounting Office (1978), indicated that FSP work requirements, and those in other welfare

programs, had been ineffective. A study by Camil Associates (1979) of the services provided by State Employment Security Agencies (SESAs) found that, of all client groups, food stamp registrants had received the fewest services and job referrals. Conversely, the "workfare" pilot projects--in which food stamp recipients were required to perform work in exchange for their benefits--suggested positive results. However, due to certain methodological problems, these findings did not produce conclusive evidence (USDA, 1987). A study by Brandeis University (1986) of the Food Stamp Work Registration and Job Search Demonstration reported a number of key findings: states were able to implement various employment and training approaches successfully, with only a few deviations in the manner in which they were implemented; all the methods tested increased the employment and earnings of participants and reduced food stamp payments; and, for all but one approach, benefits exceeded operating costs.

In addition to FSP-specific studies, many of the major employment and training programs for low-income individuals and welfare recipients, such as the Work Incentive (WIN) program and the Comprehensive Employment Training Act (CETA) programs, have also been studied (see Gueron, 1988; Bane and Ellwood, 1983; Ellwood, 1986; Gueron, 1986; and Masters and Maynard, 1981). The lessons learned from many of these previous research efforts indicate that:

- Work requirements can be implemented, but that, even if the requirements are mandatory, many will not receive services due to limited program or support services, individual noncompliance, and the winnowing effect found in programs with sequenced components.

- The programs produce positive but small impacts on employment and earnings, rarely exceeding, for example, a 10 percentage point difference in the incidence of employment or an annual earnings increase of more than $1,000.

- Effects are slow to appear and once evident tend to washout in the long run.

- The effects on welfare receipt tend to be smaller in magnitude than for earnings, and the cost of the various initiatives, whose intensity and duration vary, is generally less than the benefits yielded by them.

2. The New Food Stamp Employment and Training Program

The E&T Program mandated by the Food Security Act of 1985 does not represent the first time that work requirements have been imposed on food stamp recipients. In fact, such requirements have been part of the FSP since 1971, shortly after it became a national program. This initial requirement covered all able-bodied adults ages 18 to 65, with the exception of household members who (1) were responsible for caring for dependent children younger than age 18 or for incapacitated adults, (2) were enrolled as students at least half-time in school or training programs, or (3) were working at least 30 hours per week Nonexempt recipients were to comply with the requirements or face the penalty of having their entire household removed from the food stamp rolls. Subsequent legislative and regulatory changes modified this initial work requirement in a number of ways, including the definition of a mandatory work registrant, the requirements imposed, and the severity of sanctions for their noncompliance.

Under the 1985 Act, states had the flexibility of designing and operating the E&T Program in a manner that best suited their unique situations. The following are the key components of this new initiative:

- Service Components. States are to help food stamp recipients gain the skills, training, or work experience necessary to enhance their ability to obtain regular employment through one or more of the following components:

  Job search, which requires that participants make a specified number of job contacts in a given time period (typically 24 job contacts in eight weeks) and report those job contacts to the local Food Stamp Agency (FSA) as part of a monitoring visit.

  Job-search training, in which participants learn techniques for successful job-hunting. Some states provide such training to those

participants who have engaged in a period of unsuccessful job search. In addition, states are also allowed to offer more long-term education and vocational training services under this component, provided that such activities directly enhance the employability of participants.

Workfare, in which participants work off the food stamp benefit amount at a predetermined wage rate at a public-sector worksite.

Work experience, in which participants are typically placed at a public-sector worksite for a certain period of time in order to acquire both generic and specific work skills.

- Program Participants. The 1985 Act also grants states flexibility in defining the types of food stamp recipients who must participate in E&T. Although work registration rules are still in force, states have some discretion in defining who from the pool will be mandatory E&T participants. States may exempt registrants from participation on the basis of categorical exemptions, such as poor labor-market conditions in a given geographic area, or on-the basis of individual problems, such as difficulties with transportation or child-care arrangements.

- Funding Levels. In order to support the E&T Program, $50 million was allocated to the states for FY 1987, $60 million for FY 1988, and $75 million for FY 1989 and FY 1990. Each state's share of these funds is proportional to its respective FSP caseload and is not subject to a State matching requirement. State funds that are spent in excess of the basic grant are matched dollar-for-dollar, but FNS must approve proposed budgets before states incur expenses. Finally, states must reimburse participants for transportation and other program-related expenses up to $25 per month FNS pays half the cost of these reimbursements (reimbursements that exceed $25 are not matched). The total planned state and federal expenditures for FY 1988 were about $223 million.

- Other Regulatory Requirements. State plans for the E&T Program must be reviewed and approved by FNS. In addition, for the first quarter of FY 1989, 35 percent of mandatory participants must be placed in a service component; this requirement rises to SO percent for the remainder of FY 1989 and thereafter. However, FNS may adjust performance requirements if a state can demonstrate that the service components that it plans to offer, or the type and proportion of participants whom it plans to serve, will require a significantly higher level of effort than that required by FNS regulations.

In the remainder of this paper, we summarize the findings of the states' responses to these regulatory requirements.

C. FINDINGS

The findings reported in this paper are based on four sources of data: state plans submitted to FNS for FY 1988 and FY 1989; required state quarterly performance reports; an inventory of program operations for a nationally representative sample of 55 local FSAs that participated in the evaluation of the E&T Program; and data collected from a nationally representative sample of over 13,000 individuals eligible to participate in the E&T Program.

The different sources of data used for this report are subject to certain limitations. First, E&T operations planned by the states may not reflect the actual services that are in place in local FSAs. Second, state financial reporting often underestimates the true cost of providing E&T services. Finally, only limited information was collected from the sample of 55 local FSAs during the initial stages of the E&T evaluation, reducing the degree to which operational differences can be detected and, where found, explained. However, the data that will be available at the end of the evaluation study will address many of these limitations.

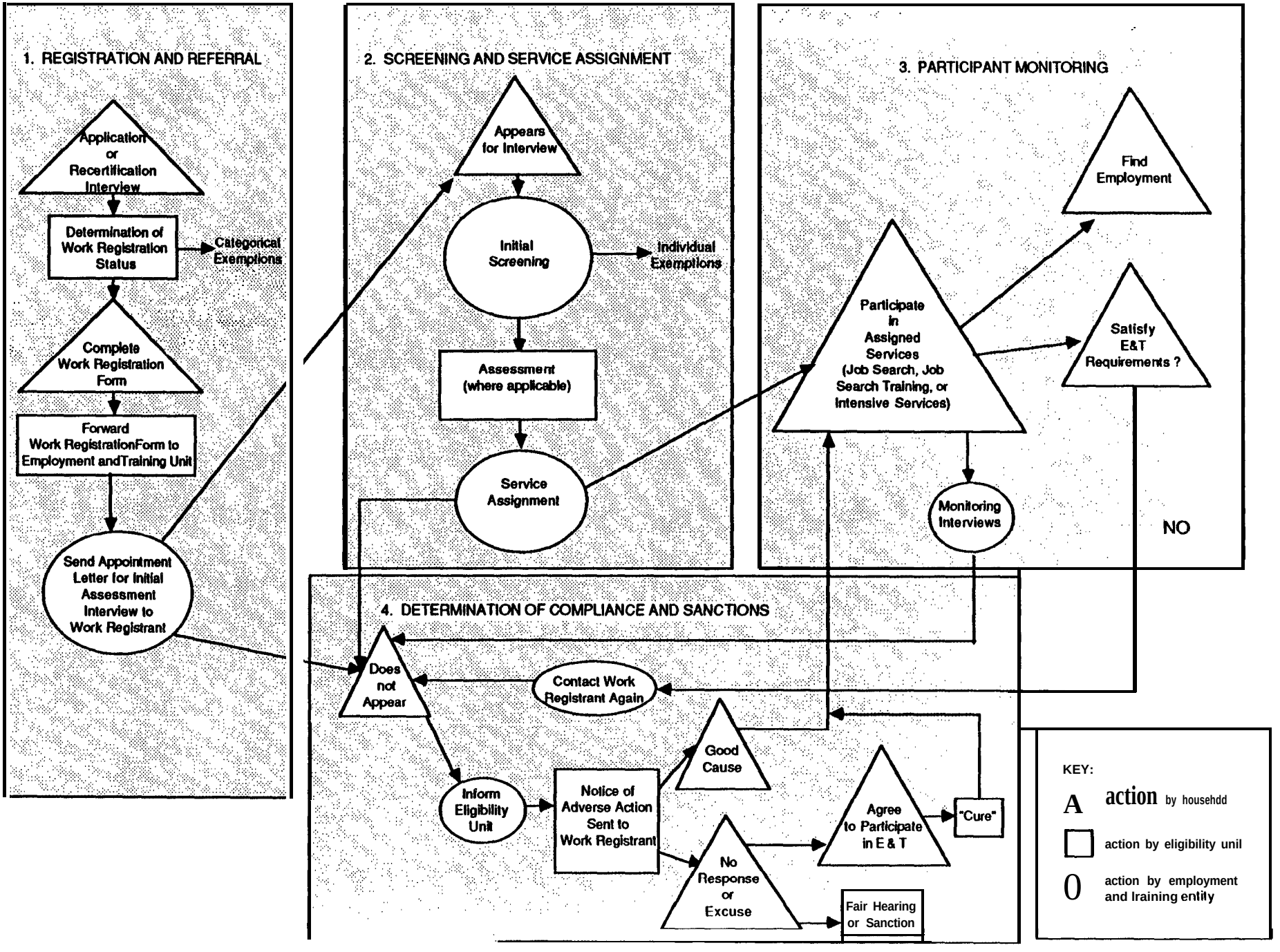
1. E&T Program Design and Service Delivery Systems

In this section, we present Endings on the operation, services, administrative structure, interagency coordination, budgeted and actual costs, and planned and actual participation levels of the E&T Program.

a. How Does the E&T Program Work?

Although operations vary, the process used to serve individual participants can be viewed as consisting of five components (see Figure 1). First, eligibility workers determine which

FIGURE 1
GENERAL MODEL OF E&T PROCESS



individuals who are applying (or being recertified) for food stamp benefits are required to register for work and accept suitable employment if it is offered. These work registrants are usually then referred to a separate employment and training office to receive services; in all but the 10 percent of local FSA that serve applicants (an E&T Program option), referral takes place after the individuals are determined to be eligible for food stamp benefits.

At the employment and training unit, work registrants are then screened for their possible exemption from E&T requirements. Once determined to be a nonexempt E&T participant (a subset of the work registrants), individuals are assigned to a service component, such as job search, job-search training, educational classes, or work experience. In most local FSAs, this step is relatively straightforward, because they are offering only one service-often job search. Where alternatives are available, approximately three-quarters of local FSAs implement some type of assessment process to ascertain the employment skills of clients, so as to determine the most appropriate service component for them; more than half give participants an opportunity to choose among a menu of available options after the assessment is completed.

Local FSAs generally monitor the progress of participants in the program, but the procedures vary by type of service. Job search and job-search training services generally specify some type of regularly scheduled monitoring visit to meet with an assigned employment and training caseworker. In more intensive services, participants are often required to submit documentation that they completed their assigned activity (for example, attaining a General Educational Development (GED) certificate). Monitoring also includes gathering information on whether or not E&T participants obtain jobs that may reduce or end their food stamp benefits.

Participants are also monitored for compliance with the E&T requirements (for example, their failure to attend classes or to make the required number of employee contacts). Although

participants may lose their benefits if they fail to comply, participants are also allowed to "cure" their noncompliance by reporting to their caseworker and agreeing to cooperate. Consequently, participants can go through repeated cycles of noncompliance and curing which can last for their entire period of certification for food stamp benefits. In fact, about one-third of the local FSAs indicate that they will "try anything to avoid sanctioning a client." For example, some local FSAs allow participants a 30day grace period from sanctions if they agree to cooperate; others indicate that they impose sanctions only as "a last resort," and will make numerous attempts to engender the cooperation of participants.

b. Types of Employment and Training Services Provided

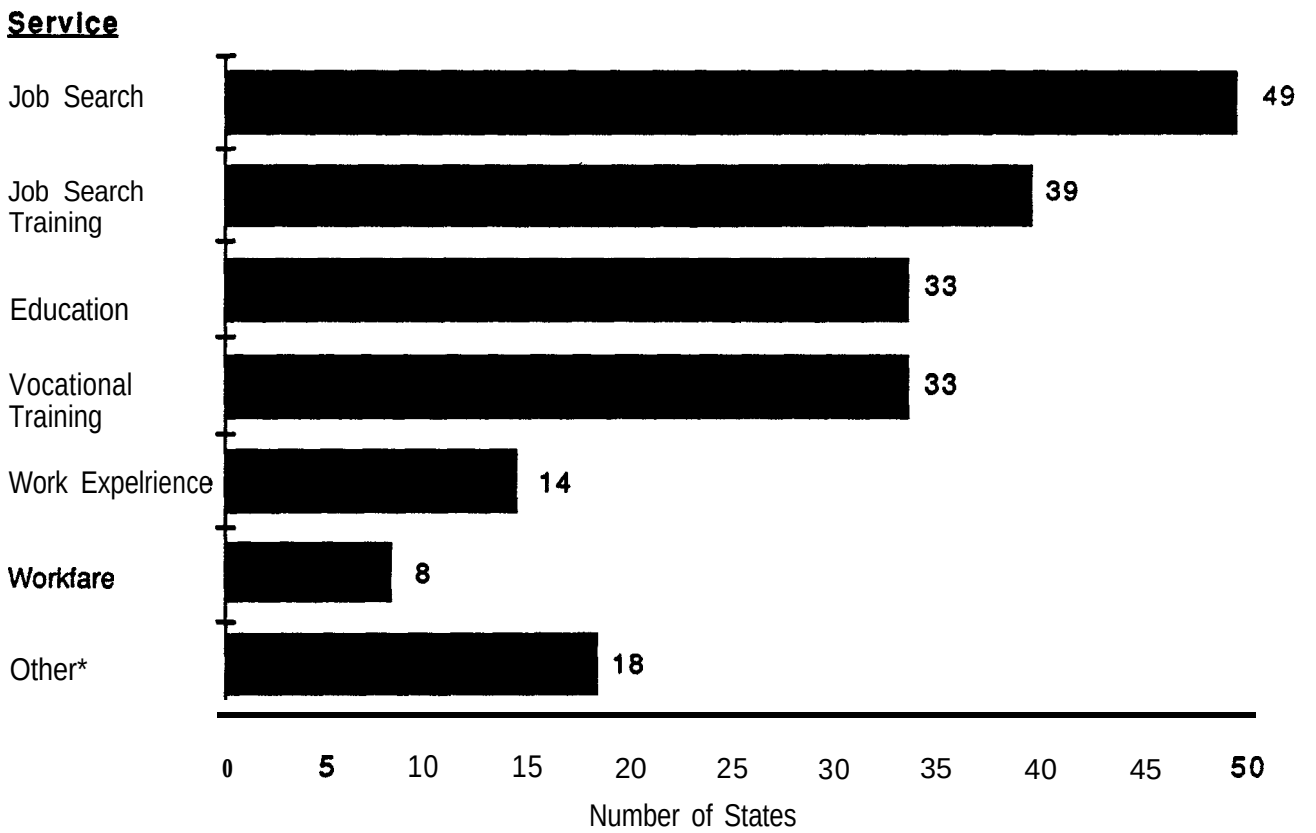
As shown in Figure 2, job search was the most commonly planned component in FY 1988 (49 of the 53 State FSAs); job-search training was also a widely planned service (by 41 states). The prevalence of job-search activities is not too surprising, since these services were often part of the FSP prior to the implementation of the E&T Program. The prevalence also reflects the intent of the states to serve as many participants as possible with the available funds, in order to meet specified performance standards for program participation starting in FY 1989 (that is, job search is generally the least expensive type of service).

States also planned a variety of more intensive education and training services. For example, 35 states planned for some adult educational services (including GED or literacy training) for those E&T Program participants who required such assistance. In addition, 33 states provided vocational education services, and 19 states incorporated work experience or workfare programs.

In light of the various service choices planned by states, we have categorized each state's E&T Program into one of three service configurations for the purposes of the E&T Program evaluation: job-search programs, iob-search training programs that offer such training either alone

FIGURE 2

E&T PROGRAM SERVICES PLANNED BY THE STATES, FY 1988



SOURCE: FY1988 State E&T Program plans.

• Includes: on-the-job training, supported employment, vocational rehabilitation, and home-based employment.

or in combination with job search, and intensive service programs that provide more in-depth remediation to a substantial portion of participants, including, for example, educational services, skills training, work experience, or workfare.

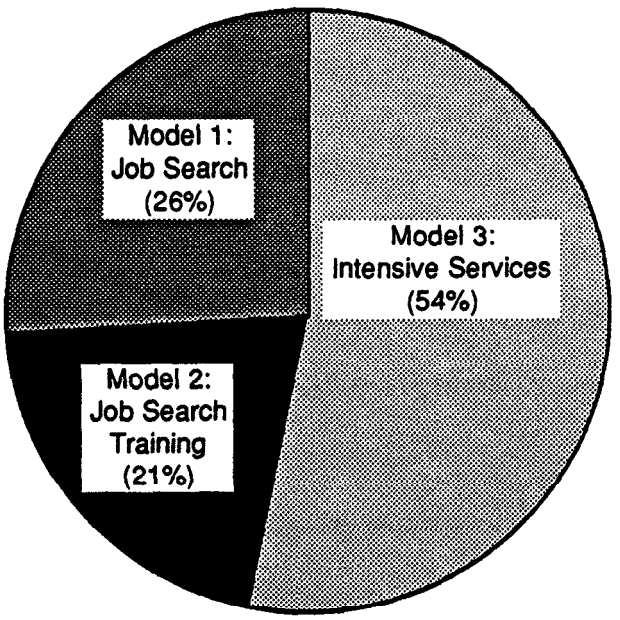
As demonstrated in Figure 3, states have responded to the new E&T Program initiative in a way that conforms with the intent of the enabling legislation. Job search, the least expensive service and the one expected to move many employable participants into jobs, has been included in the service configuration of almost every state. Beyond this service, states have chosen to add a broad mix of services that encompass different levels of intensity. What is not known at this time, however, is the extent to which the different types of services are actually used-that is, how many participants receive the various services. This information will not be available until the end of the evaluation study.

c. Change from the Previous Job-Search Program

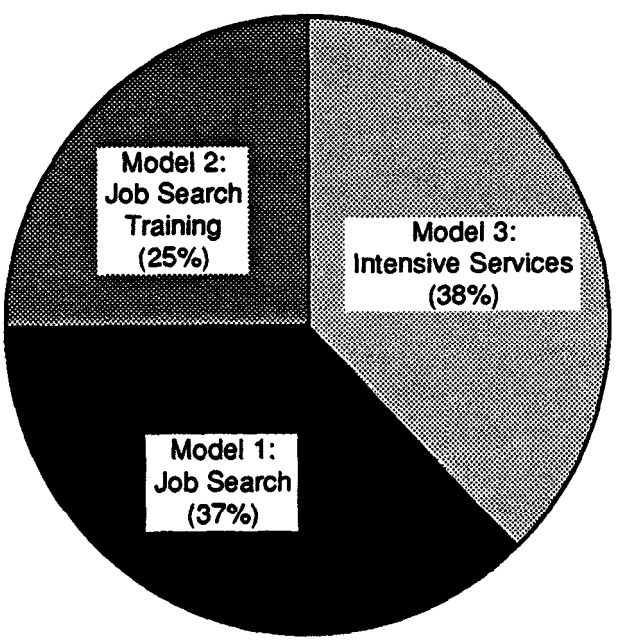
In FY 1986, 38 states were operating job-search programs for food stamp work registrants (Abt Associates, 1987). With the advent of the E&T Program, states were afforded the opportunity either to continue or expand existing programs or to initiate services not presently available. Most states (42 of the 53 FSAs) significantly expanded the availability of food stamp employment and training services; only 7 reduced geographic coverage. In addition, for about three-quarters of the local FSAs, the E&T services that were implemented represented either an entirely new program or one that differed markedly from the previously existing set of job-search services. Not surprisingly, job-search model FSAs were more likely to have retained their earlier program versions, while intensive-service model sites were more likely to have created new programs for their food stamp recipients.

FIGURE 3

PERCENT OF LOCAL **FSAs** IMPLEMENTING E&T PROGRAM SERVICE MODELS, AND PERCENT OF TOTAL PARTICIPANTS COVERED, FY 1988



Percent of Local **FSAs**



Percent of E&T Participants

SOURCE: Inventory of Program Operations in national sample of 55 local **FSAs.**

The E&T Program, then, not only increased the variety of services available to food stamp work registrants, but also made these services available to a larger proportion of the eligible population than under the previous job-search programs. This trend is quite encouraging. Congress intended that the E&T Program be a new initiative, and, for the most part, states have responded to this challenge.

d. What Other Services Are Being Provided?

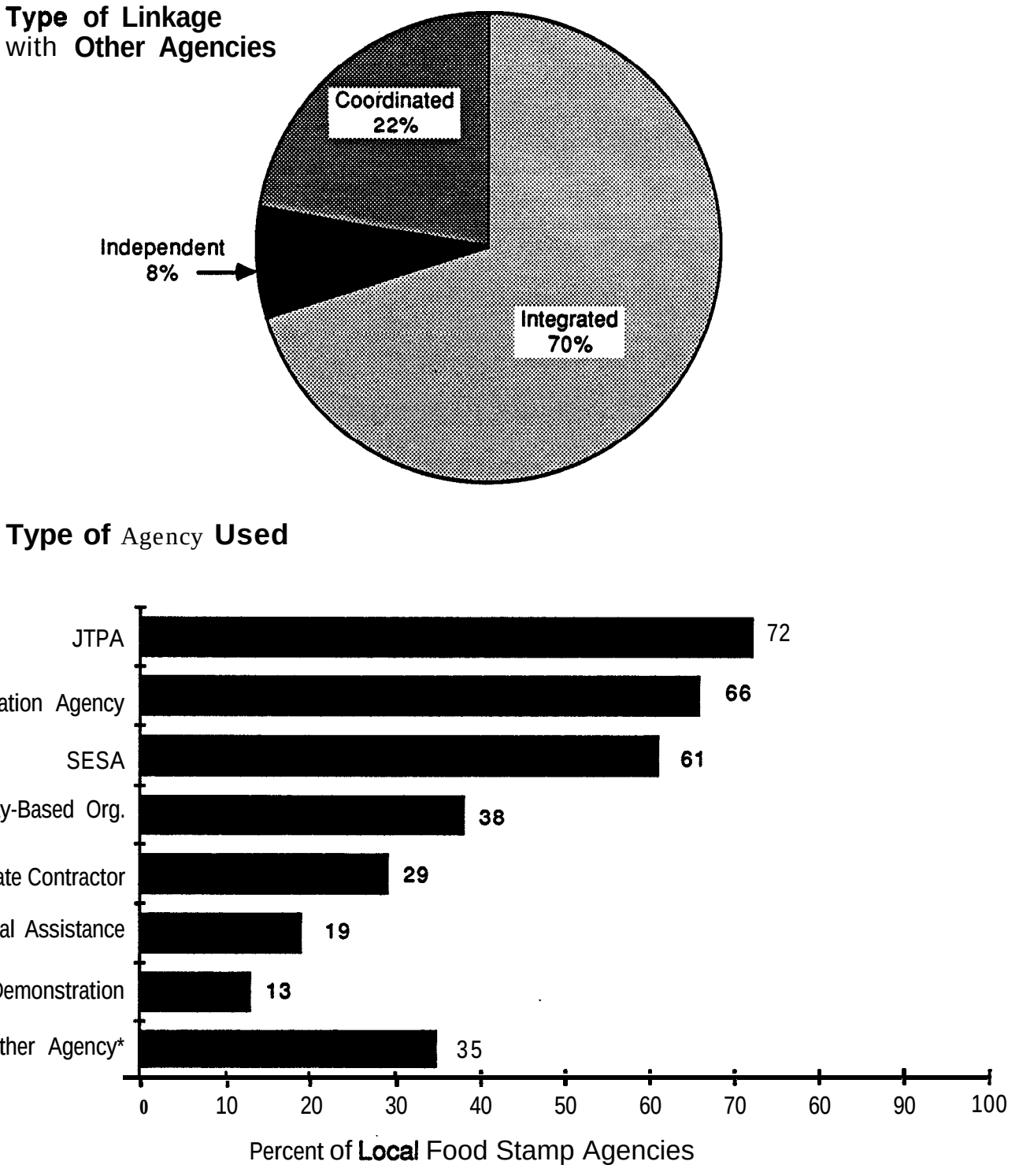
States have attempted to be flexible in deciding how participants should be reimbursed for their out-of-pocket expenses. Many states, especially those that offer more intensive services, have opted to pay actual expenses rather than to provide a fixed reimbursement amount. In addition, some local FSAs also support participants by providing them with in-kind services--nationally, about 4 of 10 FSAs provide some type of child-care services, transportation assistance (for example, reduced public transportation fare systems), or other services, including counseling and referral services. Often, these additional services are not financed by E&T Program funds, but represent the use of other available resources (including Title XX funds and special, local, or county-based resources) set aside to help pay for the expenses incurred by participants when they accept employment (e.g., the cost of buying uniforms or tools).

e. Linkages with Other Service Providers and Programs

Due to the availability of a variety of existing work and welfare programs, state and local FSAs did not have to "start from scratch" to implement E&T. The availability of these programs also provided an opportunity to achieve additional efficiencies. As shown in Figure 4, some states planned to maximize the use of JTPA services for E&T participants; others elected to serve E&T

FIGURE 4

LOCAL FSA INTEGRATION AND COORDINATION OF THE E&T PROGRAMS WITH OTHER AGENCIES AND PROGRAMS, FY 1988



SOURCE: Inventory of Program Operations in national sample of 55 local FSAs.

* Includes Job Corps, Community Action Agencies, Salvation Army, migrant worker organizations, and the military.

participants by expanding the coverage of an existing comprehensive work and welfare program **(typically designed** to serve GA or AFDC recipients).

Overall, **almost** three-quarters of local **FSAs** have integrated their **E&T** program with other agencies; less than 10 percent have implemented independently administered programs. Job-search or intensive-service model sites were more likely than job-search-training model sites to establish linkages with other agencies. For example, all intensive-service model **FSAs** and over 90 percent of local job-search model **FSAs** integrated or coordinated their programs with other agencies, most often local JTPA programs, State Employment **Security** Agencies **(SESAs),** or educational agencies. In contrast, only about threequarters of job-search-training model **FSAs** established such linkages.

In addition to forging linkages with public agencies and programs, local **FSAs** have also developed relationships with private nonprofit and for-profit organizations. For example, almost one-third of local **FSAs** have some association with a private contractor, and almost 4 of 10 have a relationship with local community=-based organizations, including the local Salvation Army, YMCA, Goodwill, and literacy council and other private, nonprofit voluntary public interest and social welfare organizations.

The nature of the linkage also varies. For example, either E&T participants may simply be referred to a local education agency as a source of possible services or the local FSA may take a more active role by establishing a contractual arrangement to provide specific services to a stipulated number of E&T participants. Typically, educational agencies (used by two-thirds of local **FSAs)** provide adult basic education and GED training services, with some local schools also providing literacy training and vocational education services. Some local **FSAs** have also contracted for similar **services** with community colleges.

Assignment of Administrative **Responsibility. E&T** services are provided by any one, or a combination of, the following administrative entities: local FSA eligibility workers; a separate

employment unit within the local FSA, an Employment and Training agency or division operated within a state's Social Services Agency; and another organization (either public or private) contracted to provide the primary E&T service or services. The most frequent arrangement, adopted by about one-third of the local FSAs, is a separate employment unit within the local FSA. If the two methods whereby the local FSA provides the primary service are combined--either the food stamp eligibility worker or the employment unit-over half of job-search model FSAs and almost two-thirds of job-search-training model FSAs administer the E&T Program themselves. These figures contrast with the 16 percent of local intensive-service model FSAs that have adopted this approach. This disparity is not surprising, given the relatively narrow range and short-term nature of the services provided by job-search and job-search-training model FSAs.

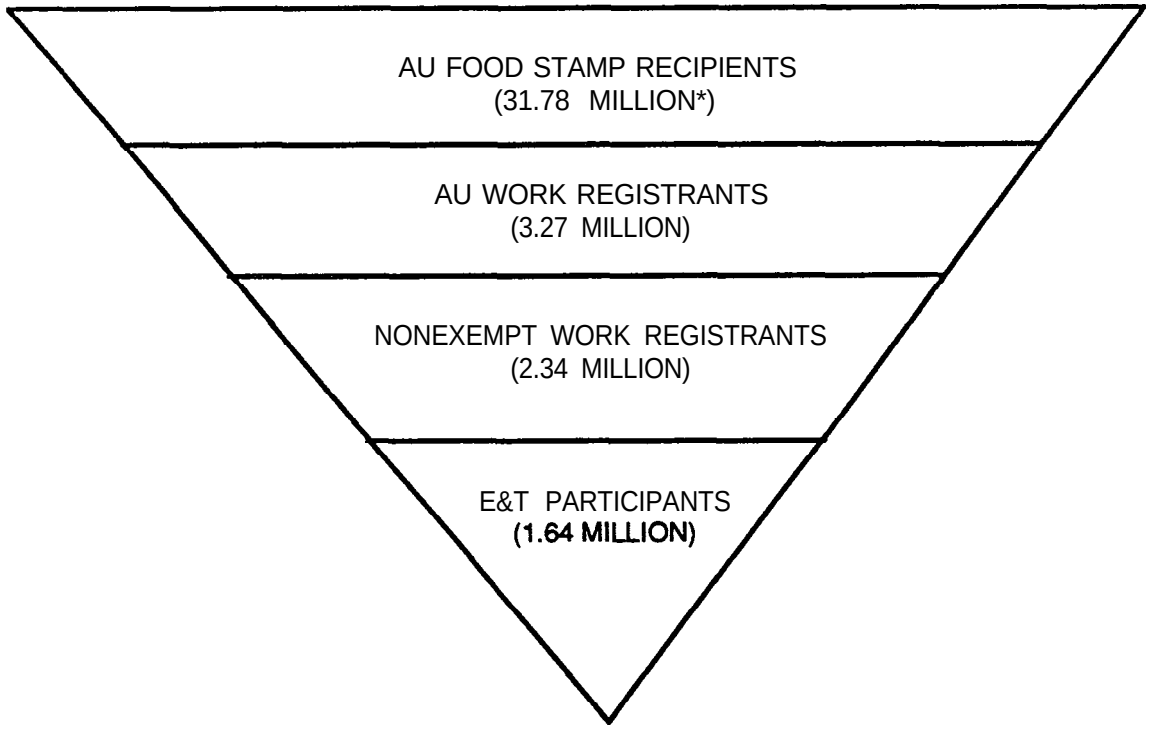
Participant Exemptions and Program Targeting. As noted earlier, states are allowed to exempt both individual and groups of work registrants on the basis of a variety of criteria. The result is that the program is targeted toward a small proportion of FSP recipients (see Figure 5). First, legislative requirements focus work policy on a group that represents about 10 percent of all food stamp recipients (about 3.3 million individuals in 1988, the period covered by this paper). State and local exemption decisions were expected to screen out about one-quarter, leaving approximately 2.3 million individuals. Finally, other state and local targeting decisions were expected to reduce this number further by about one-third, to 1.6 million; the expected number of nonexempt E&T participants whom states planned to serve in FY 1988 represents about two-thirds of all nonexempt work registrants, and almost half of all food stamp recipients classified as work registrants.

f. FY 1988 E&T Program Funding and Spending

For FY 1988, total planned federal and state expenditures for the E&T Program were $224 million, to serve approximately 1.6 million participants. States actually spent about $152 million,

FIGURE 5

E&T PROGRAM PARTICIPATION GENERATED BY EXEMPTION AND TARGETING POLICIES, FY 1988



* Estimated total number of food stamp recipients participating in a year. This is computed by multiplying the average monthly participation of 18.88 million by the average rate of caseload turnover of 1.7 (i.e., total annual participation equals 1.7 times the average monthly caseload).

SOURCES: FNS, USDA, Food Stamp Statistical Summary, Julv 1987, June 1988
State E&T Program plans for FY1988

or about 32 percent less than expected. At the same time, however, the states served only about 1 million participants in the E&T Program, or about 37 percent less than expected. While it is difficult to draw any firm conclusion from these data, it seems that the lower-than-expected program cost is due to lower-thanrpredicted levels of participation.

However, the shortfall should not be viewed as a failure of the E&T Program. Rather, states appear to have overestimated the number of recipients subject to work registration. Given the short planning period afforded to state FSAs, and the lack of reliable information on which these estimates could be based, it is not surprising that the projections proved to be somewhat inaccurate. Although the penetration of the E&T Program could be increased (for example, many states have exempted a significant proportion of their counties from participation), the participation totals for FY 1988 indicate that a large number of individuals are being served. To place this discussion in perspective, one should consider that participation in all AFDC work programs was about 714,000 individuals nationally in 1985 (U.S. General Accounting Office, 1987).

As expected, the average cost of participation varied across the three service models; the least intensive model (job search) generated the lowest average cost per participant ($80), the job-search-training model a higher per-participant cost of $140, and the intensive-services model a per-participant average cost of $186. However, it is important to note that, while nationwide these average costs line up as expected, average costs vary widely by state within a given service model. Such variation may be due to a number of factors: states have been classified according to the most prevalent type of service component (within categories, other types of services may be offered which can alter the overall cost of an individual state program); the extent to which FSAs have been able to forge linkages with other state agencies and programs differ; and the manner in which services are actually delivered may differ in important ways, so that similarly entitled components may in fact be very different.

g. Planned E&T Program Changes for N 1989

For N 1989, states planned to serve fewer participants than was planned for N 1988-1.4 million, compared with 1.6 million in N 1988. While states were thus adjusting to their previous overestimates, they were still expecting a net expansion in actual participation for N 1989. This growth would be due largely to the fact that a majority of states had expanded the geographic coverage of the program.

Most states also planned relatively modest changes to their service components. The largest changes occurred in the availability of three service components-workfare, which was dropped by all states that offered this component in N 1988, and work experience and vocational education, each of which was dropped by about one-third of the states that originally offered these components. (No information is available on why these changes have occurred.)

2. Description of Program Participants

In this section, we describe how the latitude afforded to states in the design of their E&T services affected the types of work registrants who were selected to participate in the Program.[34]

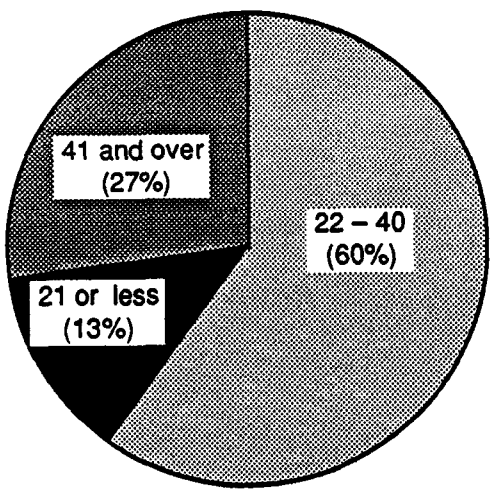
a. Demographic Characteristics

Figure 6 provides a description of the basic demographic characteristics (that is, the age, gender, marital status, and ethnicity) of individuals participating in the E&T Program in N 1988. As shown in Figure 6, about 3 of 5 E&T participants are between the ages of 22 and 40 (an

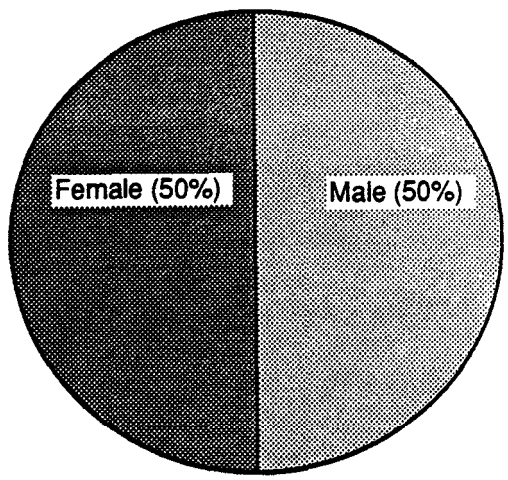
[34]The information in this section is derived from data collected from a nationally representative sample of about 13,000 individuals eligible to participate in the E&T Program A baseline information form was completed on each individual selected randomly for the evaluation study at the time of his or her order application or recertification for food stamp benefits. This form obtained information on household characteristics, such as household size and composition and the types and amounts of income, and the characteristics of individuals required to participate in the E&T Program, including their education and previous work experience.

FIGURE 6

DEMOGRAPHIC CHARACTERISTICS OF E&T PROGRAM PARTICIPANTS **AT** APPLICATION/RECERTIFICATION, FY 1988



Age



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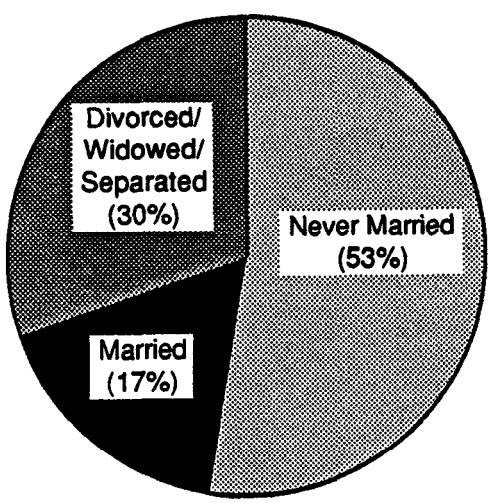
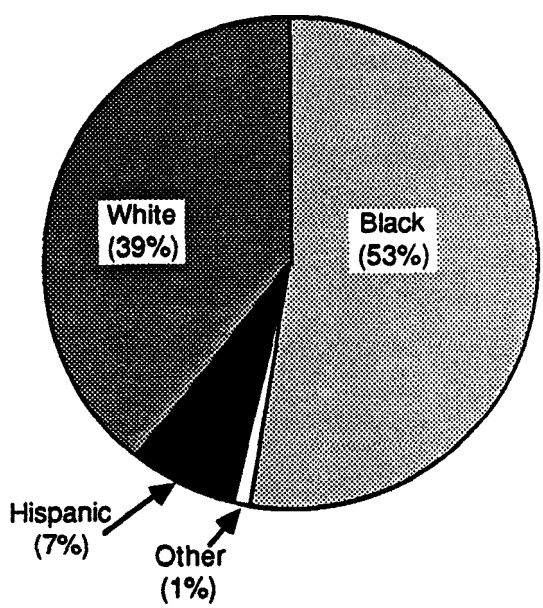


Marital Status



Ethnicity

SOURCE: Baseline interviews with a sample of about 13,000 eligible E&T participants.

overall average age of about 33 years). This age distribution is similar to the age distribution of all adult (age 18 or older) food stamp recipients (USDA, 1988). However, the E&T participants are somewhat younger than the typical work registrant (the group from which E&T participants are drawn). About half of all work registrants are between the ages of 22 and 40.[2]

Men and women are equally likely to be E&T participants. This gender distribution differs from the gender distribution of the general food stamp population, in which women account for nearly two-thirds of all recipients (USDA, 1988). But this pattern is similar to the population of all work registrants-about half of whom are male.

Slightly more than half of the E&T participants have never been married, and married individuals account for less than one-fifth of all E&T participants. However, work registrants, in general, are about twice as likely to be married'

About half of the E&T participants are black, and two of every five are white non-Hispanic. Compared with the general food stamp population, E&T participants are far more likely to be members of minority groups-about one-third of all food stamp recipients are black (U.S. Bureau of the Census, 1984). E&T participants also differ somewhat from the pool of all work registrants, of whom slightly more than half are white non-Hispanic.

b. Household Size and Composition

In line with the our discussion on marital status, E&T participants are overwhelmingly from single-person households. Slightly more than half are living in single-person households, nearly one-fourth in two-person households, and the remainder in households with three or more persons. This pattern is far different from the household composition of both the general food stamp

[2]Unpublished tabulations from the Summer 1986 Food Stamp Quality Control sample.

[3]Ibid.

population, in which only about one-fifth of all recipients (excluding elderly households) live in single-person households (USDA, 1988), and the population of all work registrants, about one-fourth of whom live in single-person households.

While 54 percent of E&T participants are from single-person households, 9 percent are single females with one or more children at home; about 10 percent are from households that consist only of two married adults; and 11 percent are from households that consist of two married adults and one or more children. The remaining 17 percent reside in households that do not contain a married couple. In the general food stamp population, close to two-thirds of the recipient households have resident children, and over three-quarters of these households are headed by women (USDA, 1988).

c. Multiple E&T Participants

Although most households contain only a single E&T participant, a substantial number (about 1 of 6) contain more than one person who participates in the E&T Program. This finding is even more striking in light of the fact that more than half of the E&T participants live alone. For example, in about half of all E&T households that consist of a married couple with dependent children, both parents participate in the Program.

d. Household Income

Approximately two-thirds of the E&T participants live in households whose annual income is less than $3,000; about four of five have an income of less than $6,000. Total gross monthly incomes for E&T participant households averaged $287 in FY 1988. This figure is about two-thirds of the household income of both the typical food stamp recipient, whose gross household income averages $417 per month (USDA, 1988), and the typical work registrant, whose income averages about $425. This difference is due largely to the higher incidence of single-person

households among the E&T participants (which have fewer sources of income) that was noted previously.

With respect to unearned income, the proportion of E&T participant households that receive cash assistance (AFDC or GA) is, in the aggregate, similar to the receipt of such assistance by food stamp recipients--about half receive either AFDC or GA (USDA, 1988). However, E&T participants are about three times as likely as the average food stamp recipient to receive GA benefits (40 percent versus 12 percent) and about one-sixth as Likely to receive AFDC (6 percent versus 38 percent). In general, the typical work registrant household is also much more likely than the average E&T household to receive AFDC (about 17 percent versus 6 percent for the E&T household), but much less likely to receive GA benefits (15 percent versus 40 percent for the E&T household).

e. Educational Backmound

As a group, the E&T participants appear to lack the formal education necessary to compete effectively for jobs in today's demanding labor market, with more than half having failed to complete their high school education. This proportion compares with about threequarters of the adult population (older than age 24) who have completed high school. However, this finding is the same as for the general food stamp population, in which slightly more than half of all recipients do not have a high school degree (U.S. Bureau of the Census, 1984). A study of the Food Stamp Job Search Demonstrations (Brandeis University, 1986) found that work registrants had an average of 10.5 years of schooling. On the positive side, about one-third of all E&T participants have received supplementary technical or vocational training outside of high school, which should enhance their employability.

f. Labor-Market Experience

The E&T participants are also generally not well attached to the labor market. In the general population, Ryscavage and Feldman-Ha&ins (1987) found that close to three-quarters of all persons older than age 16 are gainfully employed some time during a 12-month period. In contrast, only about half of the E&T participants reported having worked for pay at some time during the previous 12 months. Of those who worked, about half worked more than six months in the last year, and about one-third worked from 9 to 12 months. Similar labor-market activity was found in the previous job-search demonstrations, in which about 57 percent of the work registrants reported some work experience in the preceding 12 months.

When E&T participants did work in the last year, they worked close to full time. On average, participants worked 30 hours per week when they were employed, at an average hourly pay of $5.59. At the time of their entry into the Program, however, the E&T participants were generally not employed-only about one in ten worked in the week prior to applying for food stamp benefits. This pattern is slightly lower than the work status of the general population of food stamp recipients, in which about 14 percent of all household heads are employed. On average, the E&T participants who were employed worked about 18 hours per week.

g. Relation&in between E&T Program Services and Participant Characteristics

In general, participants in local job-search model FSAs are most likely to be white married males, those in local job-search-training model FSAs are most likely to be black single females, and those in local intensive-service model FSAs are most likely to be black single females or female heads of households.

The most striking finding about wages is that participants in local job-search model FSAs are by far the most likely to have come from households that had earned income at the time of FSP certification (32 percent compared with 12 percent and 19 percent in job-search training and

intensive-service model FSAs, respectively). Given that the intent of job-search is to move the most employable participants into productive jobs, this finding seems to support the notion that this type of service is targeted correctly.

Comparing the income pattern of participant households across the three models further suggests an association between E&T participation by public assistance recipients and the service configuration in place at the local FSA. For example, whereas less than 2 percent of job-search model households receive GA, almost two-thirds of job-search-training model households and about 40 percent of intensive-service model households receive such assistance. With respect to AFDC, participant households in local intensive-service model FSAs are most likely to receive such benefits (11 percent, compared with 6 percent and 2 percent for job-search and job-search-training FSAs, respectively).

The educational attainment of participants differs across the three service models, albeit modestly. Participants in local job-search-training model FSAs are more likely both to have failed to complete their high school education and to have obtained supplementary vocational/technical training. Among the three categories of local FSAs, participants in this group are less likely to be prepared for the labor market.

Finally, with respect to employment, E&T participants in local job-search-training model FSAs are more likely to be experiencing chronic unemployment. These participants are substantially less likely to have worked in the previous 12 months. However, at the time of certification for food stamp benefits, participants in local intensive-service model FSAs were least likely to have been employed, or to have been actively seeking employment, during the previous month.

D. CONCLUSIONS

Six themes emerge from our evaluation of the implementation of the E&T Program in FY 1988:

1. E&T is a varied program. Congress intended that the E&T Program be flexible enough to give states the opportunity to design programs that best suit their unique needs. In this regard, the Program appears to have been successful. States have provided food stamp recipients with a variety of employment and training opportunities, and have provided these services through a wide range of sources (for example, JTPA, SESA, local educational institutions, community colleges, and other public and private community-based agencies).

2. FSAs have recognized the needs of individual participants. States have attempted to help participants complete their employment and training programs. Where financial burdens can be a barrier (especially with respect to more intensive service components), states have made an effort to take a more flexible approach to reimbursing them for their out-of-pocket expenses. Many local FSAs have also provided in-kind support services, such as child-care arrangements and transportation services.

3. State programs reflect new initiatives. Although states could merely have extended the earlier versions of their job-search programs to comply with the E&T mandate, they did not do so. About threequarters of local FSAs have implemented either entirely new programs or ones that differ markedly from previously existing job-search services.

4. The Program is serving a large number of food stamp recipients. States are permitted to apply various exemptions for' determining who must participate in the E&T Program. States have applied these exemptions widely, particularly geographic area exclusions. E&T enrollment for FY 1988 was approximately one million mandatory work registrants and volunteers--about one-third of the total pool of all eligiile work registrants. It is important to keep in mind, however, that the E&T Program is larger than all of the AFDC work programs put together, and that FY 1988 was the first full year of program operations.

5. E&T is an evolving program. Comparing program plans for FY 1988 and FY 1989 reveals that states are learning from their past experience. Rather than adopting rigid approaches for meeting federal requirements, states appear to be quite willing to experiment with new service components. Again, this outcome is encouraging-Congress gave states the opportunity to try different ways to help low-income persons obtain gainful employment, and states appear to be willing to seek alternative ways to achieve this goal. In addition, states planned to expand services substantially in FY 1989--

planned enrollment for FY 1989 was about 40 percent higher than that projected for FY 1988.

6. States have targeted the E&T Program toward certain types of food stamp recipients. In general, the E&T Program is serving food stamp recipients who are young, unmarried, and non-white. However, these individuals need remedial services to compete in today's labor market. They typically lack formal education, and have been unable to maintain steady employment in the past.

   States appear to have targeted the E&T Program toward GA recipients; about 40 percent of all E&T participants receive such benefits. This focus may be due to two factors. First, unlike AFDC recipients, GA recipients involved in another work program are not categorically exempt from E&T participation. Second, states have a clear incentive to provide job services to their GA population through the E&T Program. If the Program is successful at helping participants find employment, states can realize significant savings in welfare expenditures as these individuals become self-sufficient.

   Finally, it is notable that relatively few AFDC recipients are participating in the E&T Program. Only about 6 percent of the E&T participants receive AFDC benefits, and those who do receive AFDC participate primarily in local intensive-service model FSAs. The relatively low representation is due to the fact that AFDC recipients involved in Title IV-A work programs (WIN) are exempt from work registration. Those AFDC recipients who have been assigned to E&T may be individuals not covered under an existing WIN program. For example, the state may provide services only to AFDC households in which both parents are present. In such instances, the E&T Program may provide an opportunity for states to extend employment and training services to a portion of their AFDC caseload' who have been excluded from such assistance otherwise. This may also account for the concentration of these participants in intensive-service model FSAs (that is, E&T may have been integrated with a pre-existing work program).

IX. LONG-TERM PARTICIPATION IN THE FOOD STAMP PROGRAM BY WORK REGISTRANTS

Charles Usher, Harlene Gogan, and Helen Koo

A INTRODUCTION

This paper presents the findings of an exploratory study on the participation of work registrants in the Food Stamp Program (FSP). Since the early 1970s, certain members of households that apply for food stamps have had to meet such requirements as job search or workfare in order to establish and maintain their eligibility for assistance.[37] These persons are generally able-bodied, nonelderly adults who do not have primary responsibility for the care of children or disabled persons who live in their household. Thus, society has increasingly come to expect that such recipients should seek employment to provide income that would help their households meet their nutritional needs.

Although more information has recently become available on the FSP participation of households over time, a number of important questions remain, particularly about work registrants. First, the extent of long-term participation by work registrants is unclear. Whereas Burstein and Visher (1989) report a median spell of 5 to 6 months, work registrant households in the control group of the Food Stamp Workfare Demonstration Project showed a median duration of 4 months (The Urban Institute, 1987). An analysis by USDA (1986) indicated that the average length of stay for work registrants was 8.1 months. Our review of these studies indicates that, more than anything else, the variation in these estimates is due to the design of the studies and the data bases from which they were derived.

[37] An historical overview of the evolution of work requirements in the Food Stamp Program may be found in a recent report by Abt Associates (1988).

Second, long-term dependence on the FSP, particularly for work registrants, may follow patterns that differ from those exhibited by AFDC recipients or participants in other assistance programs that are governed by categorical eligibility criteria. One pattern is continuous participation over a relatively long period of time. Another pattern would be a series of relatively short spells separated by periods of nonparticipation. Both reflect long-term dependence, but of two distinct types. Both types of long-term participants are also likely to consume a great deal of resources (both in benefits and in administrative costs), and, thus, both types must be identified and studied.

A third question is whether employment and training services can be targeted more efficiently and effectively toward long-term work registrants. If a significant proportion of work registrants tend to become dependent on the FSP, it may be possible to develop strategies to reduce the costs associated with long-term participation. However, in order to move toward this objective, we must first demonstrate at least on a preliminary basis that some work registrants do in fact become dependent on food stamps and generate substantial program costs.

Consistent with these three questions about work registrants, the exploratory study was undertaken to address the following objectives:

- To describe patterns of participation in the FSP by an entry cohort of work registrants who were subject to a meaningful work requirement
- To assess the extent of long-term participation by work registrants, in terms of both long single spells and a series of spells
- To measure the allotment costs for work registrants, according to their pattern of participation

B. RESEARCH METHODOLOGY

The research design developed for this study entailed drawing samples of work registrants who initially entered the FSP in Alabama and the State of Washington during the first half of

1986. These states were chosen for the study because they exhibited differences along the following dimensions:

- The characteristics of the work registrant caseload-for example, the proportion of participants required to register, of work registrant households that comprised only one person, of households that received AFDC, and of work **registrants** who received GA payments
- The administration of work requirements
- The socioeconomic environment

Data were collected in two localities in each state. Spells of participation by the samples of work-registrant households were followed from early **1986** through the fall of **1988,** based on manually abstracted food stamp and Employment Service (ES) case-records data

An advantage of this design is that it permitted us to follow a defined group of work registrants (that is, a sample that was representative of registrants who enter the program during a specific time period and in specific localities) from the beginning of their participation through a defined period It also avoided the upwardly biased estimates of spell length that occur in longitudinal analyses of cross-sectional samples of participants because they tend to overrepresent long-term cases. Instead, our using an entry cohort provided findings that are representative of all cases that enter the program during a given period. Entry cohorts provide unique insight into the potential problem of multiple spells as a special pattern of long-term dependence.

The primary purpose of our analysis of the case-records and survey data was to determine the duration of spells and patterns of participation of an entry cohort of work registrants over as many as 33 months. Because some spells are still in progress at the end of the data collection (that is, they are "right-censored"), life-table techniques are necessary in order to avoid truncation bias. Life-table analyses have been performed for each of the **first,** second, and higher order spells of food stamp participation.

C. CONTEXT OF THE STUDY

Given the scope of this study, we should consider two major issues associated with the internal and external validity of this study. First, in light of our objective to examine the participation of work registrants in the face of a meaningful work requirement, we must assess whether such a requirement actually existed in the study sites. Of special concern is how quickly the work registration/job search (WR/JS) process became operationalized for each work registrant, whether the work registrant complied with work requirements, and how carefully the Employment Service (ES) and the food stamp office monitored compliance. Collectively, these characteristics of the WR/JS process define the work requirement that was imposed on the subjects of the study.

The second issue discussed in this section pertains to the characteristics of work registrants selected for the samples from Alabama and Washington. These data enable us to compare the subjects of this study with their counterparts in other states.

1. Implementation of Food Stamp Work Requirements

Table 1 provides a summary of the findings on the WR/JS process in the study sites. The highlights are as follows:

- Most work registrants in the study sites failed to keep the first appointment for their assessment interview.
- The ES eventually submitted reports of noncompliance for approximately half of ail the work registrants whose cases were included in the study.
- Fewer than one of five sample work registrants in Alabama and only two of five in Washington actually contacted potential employers in a job search.

In addition, most ES assessment interviews were not scheduled until the month after the month in which the food stamp application was submitted, and many were not scheduled until two months later.

TABLE 1

WORK REGISTRATION/JOB SEARCH
ACTMTIES AMONG SAMPLE WORK REGISTRANTS

	Length of Initial Spell					
	Alabama			Washington		
Work Registration/ Job Search	l-3 Months	4-6 Months	>6 Months	l-3 Months	4-6 Months	>6 Months
Failed to Keep Appointment	73.8%	620%	43.4%	71.9%	47.5%	34.4%
Noncompliance Report Filed by ES	71.7	36.7	13.2	65.6	41.0	34.4
Engaged in Job Search	6.7	27.8	42.3	21.9	524	59.4

It may be the case that by the time an appointment is scheduled and rescheduled, or before the job search is begun, many work registrant households have left the FSP. As we discuss below, approximately half of the work registrants included in this study spent three or fewer months in the FSP before ending their first spell. Thus, it is possible that the high rate of turnover among work registrants simply made it difficult for the food stamp and ES offices to keep pace with the flow of work registrants through the program.

2. The Characteristics of Work Registrants

The typical work registrant in this study was relatively young (a mean of 33.8 years of age in Alabama and 30.2 years of age in Washington), and a large proportion had not completed 12 years of education (425 percent in Alabama and 35.2 percent in Washington). Slightly more than half (55 percent) of the sample of work registrants in Alabama were female, whereas women comprised approximately one-third (35 percent) of the sample in Washington. Although case-records in Washington did not indicate the race of work registrants, data from Alabama showed

that nearly three of five work registrants in that state (59 percent) were black Only one-third (34 percent) of the sample of work registrants in Alabama had work experience, whereas nearly four of five work registrants (79.6 percent) in Washington had worked previously. Of those who had work experience, nearly half in both states (47.5 percent in Alabama and 45.7 percent in Washington) had worked less than six months in their most recent job.

Many of the work registrants in the samples lacked the education and training that is necessary for them to obtain jobs that pay well and that are not subject to being eliminated during recessionary periods. Moreover, despite their general lack of education and training, the majority of work registrants in the two samples were more likely to have recent work experience than previous research would suggest. Perhaps more than any other personal factor, this experience should facilitate their return to the labor force, as **well** as their departure from the FSP. However, we should recognize that experience and training cannot always counteract the powerful market forces that prevail in periods of economic decline.

3. The Characteristics of Work **Registrant** Households

Many work registrants (46.9 percent in Alabama and 55.5 percent in Washington) were living in one-person food stamp households. One-third of the work registrant households in Alabama and fewer than one-fourth (21.5 percent) of those in Washington contained three or more members. One-third (329 percent) of the households in Washington and one-fourth (25.8 percent) of the households in Alabama had earnings when they applied for food stamps in early 1986. Households in Washington received an average monthly food stamp allotment of $105, whereas those in Alabama received an average monthly allotment of $132

D. LONGITUDINAL ANALYSIS OF PARTICIPATION

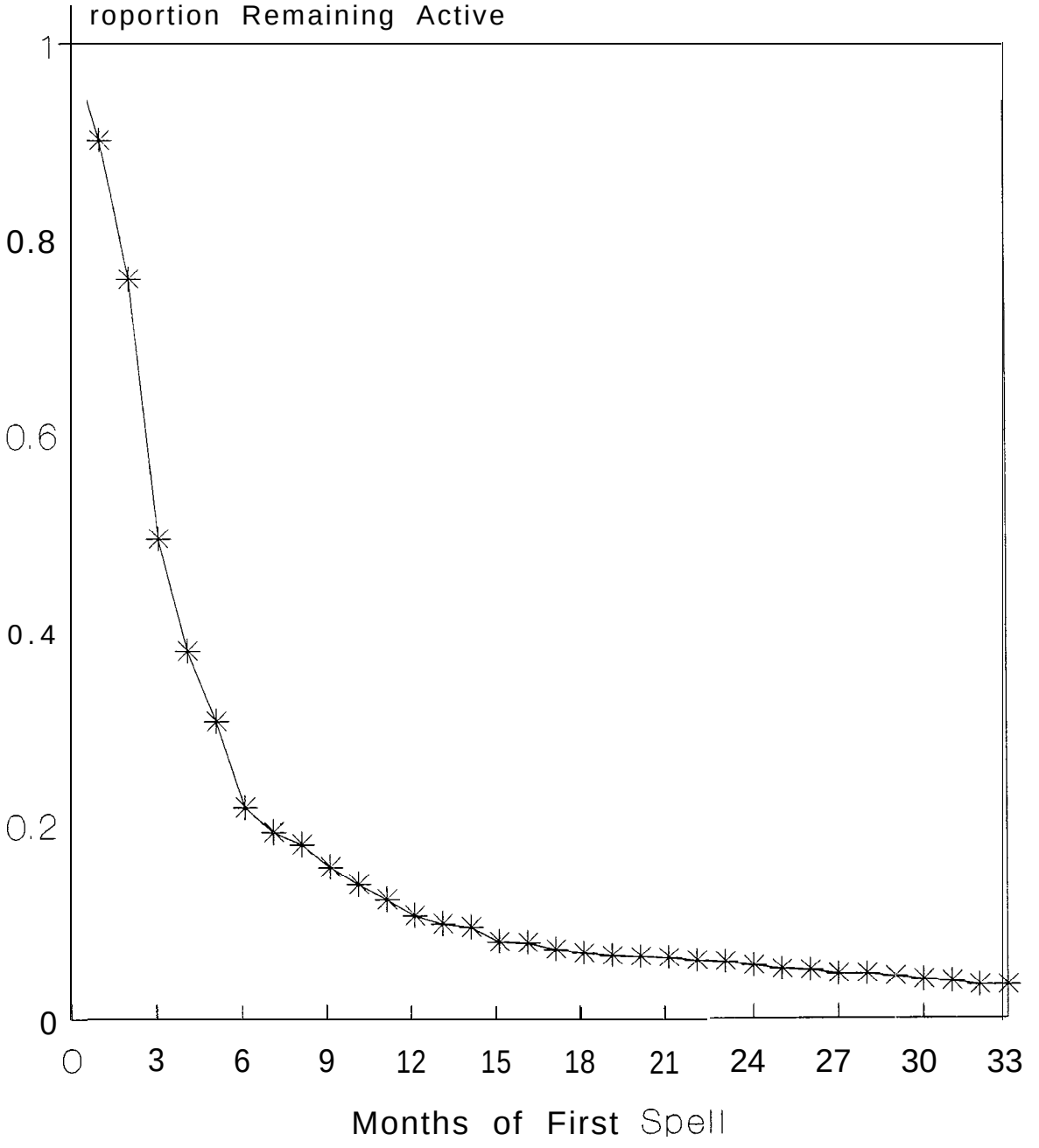
This section describes three aspects of the long-term participation of work registrants in the FSP--the duration of initial spells, multiple spells, and the cost of participation over time.

1. The Duration of Initial Spells

Figure 1 presents the results of a life-table analysis of the initial spells of the sample of work registrant cases from Alabama and Washington. The numbers along the horizontal axis indicate the number of months following the initial certification for food stamps. The numbers along the vertical axis range from 0 to 1.0, where 1.0 indicates the full sample as of the month of initial certification for each case in the sample. Thus, one month after initial certification, approximately 90 percent of the cases remained active. Stated another way, 10 percent of the cases received food stamps for one month, but did not receive food stamps in what would have been the second month of their certification period. Similarly, by the end of two months, about 25 percent of the work registrant households were no longer participating. By applying the same interpretive approach to the remainder of the survival curve, we can draw some conclusions about the duration of initial spells of food stamp participation for work registrant cases. In general, approximately half of the entry cohort had left the FSP by the end of the third month. Thus, the median length for initial spells across both states was 2.97 months. Interestingly, the same rate of departure from the rolls occurred over the next three months. By the sixth month after initial certification, only 21.6 percent of the cohort, slightly less than half of the cases that continued to participate after three months, remained active. At the end of 12 months, only 10.8 percent of the households continued in their first spell. Only 3.4 percent of the work registrant households that initially entered the FSP in early 1986 would still be active 33 months later.

Figure 1

Proportion of Cases Remaining Active After Successive Months of First Spell



This pattern of first spells is important. Nearly three-fourths (72.6 percent) of the Alabama work registrant households and two-thirds (66.4 percent) of the Washington households experienced only one spell of participation. Therefore, the experience of most households that were affected by work requirements is reflected in Figure 1. Perhaps the most noteworthy characteristic of the survival curve is the set of four distinct phases: I-months 1-3; II-months 4-6; III--months 6-12; and IV-months 12-33. Over half (SO.7 percent) of the entry cohort had left the program by the end of the third month. Of the remaining cases, 56.3 percent had left by the end of the sixth month. In contrast, of the 21.6 percent of the cases still active after six months of participation, exactly half were still participating in the FSP a year after they initially became eligible. It required another 12 months for half of the 10.8 percent of the cases active after 12 months to leave.

2. Multiple Spells

Only 32 percent of the work registrant households that left the FSP after an initial spell in Washington and Alabama would later apply for and receive food stamps in the same locality within 33 months after their initial certification for the first spell. The distriiution of cases by the number of spells is shown in Table 2. It indicates a very similar pattern of multiple spells, in that nearly one-fourth of each entry cohort (20.7 percent in Alabama and 24.7 percent in Washington) experienced two spells, and about one in 20 cases (4.6 percent in Alabama and 6 percent in Washington) experienced three spells. Fewer than 3 percent of the households in either state had more than three spells. While the lengths of the first and second spells differed very little in Washington, second spells in Alabama were nearly twice as long as the initial spells in that state, and 45 percent longer than second spells in Washington.

TABLE 2

DISTRIBUTION OF CASES BY THE NUMBER OF SPELLS
AND LENGTH OF SPELLS

Number of Spells	Alabama		Washington	
	Percent	Median Spell (mos.)	Percent	Median Spell (mos.)
1: 1-3 mos.	41.6	2	29.2	3
1: 4-6 mos.	15.5	5	23.0	5
1: > 6 mos.	15.5	15	13.2	13
1: Subtotal	72.6	3	66.2	4
2				
3	20.7 4.6	*5	24.9 6.0	4*
4	1.7	*	1.8	*
5	0.4	*	0.7	*
6	--	*	0.4	*
Subtotal	27.4		33.8	
Total	100.0%		100.0%	
Sample Size	459		281	

*Not computed due to small subsamples.

As indicated below, no more than a third of the work registrants in this study returned for a second spell. Although second spells tended to be of a longer duration in Alabama, the curves in Figure 2 indicate that households in Alabama were slower to return to the food stamp caseload than were households in Washington. Whereas 20 percent of the households in Washington returned to the program within three months after they completed their initial spell of participation, only 10.8 percent of the households in Alabama had returned by that point. Following this initial difference, however, cases in the two states ultimately experienced comparable rates of return, as indicated by the similar slopes of the two curves in the figure, but the cumulative proportion who returned by 33 months was lower in Alabama (30 percent, compared with 35 percent).

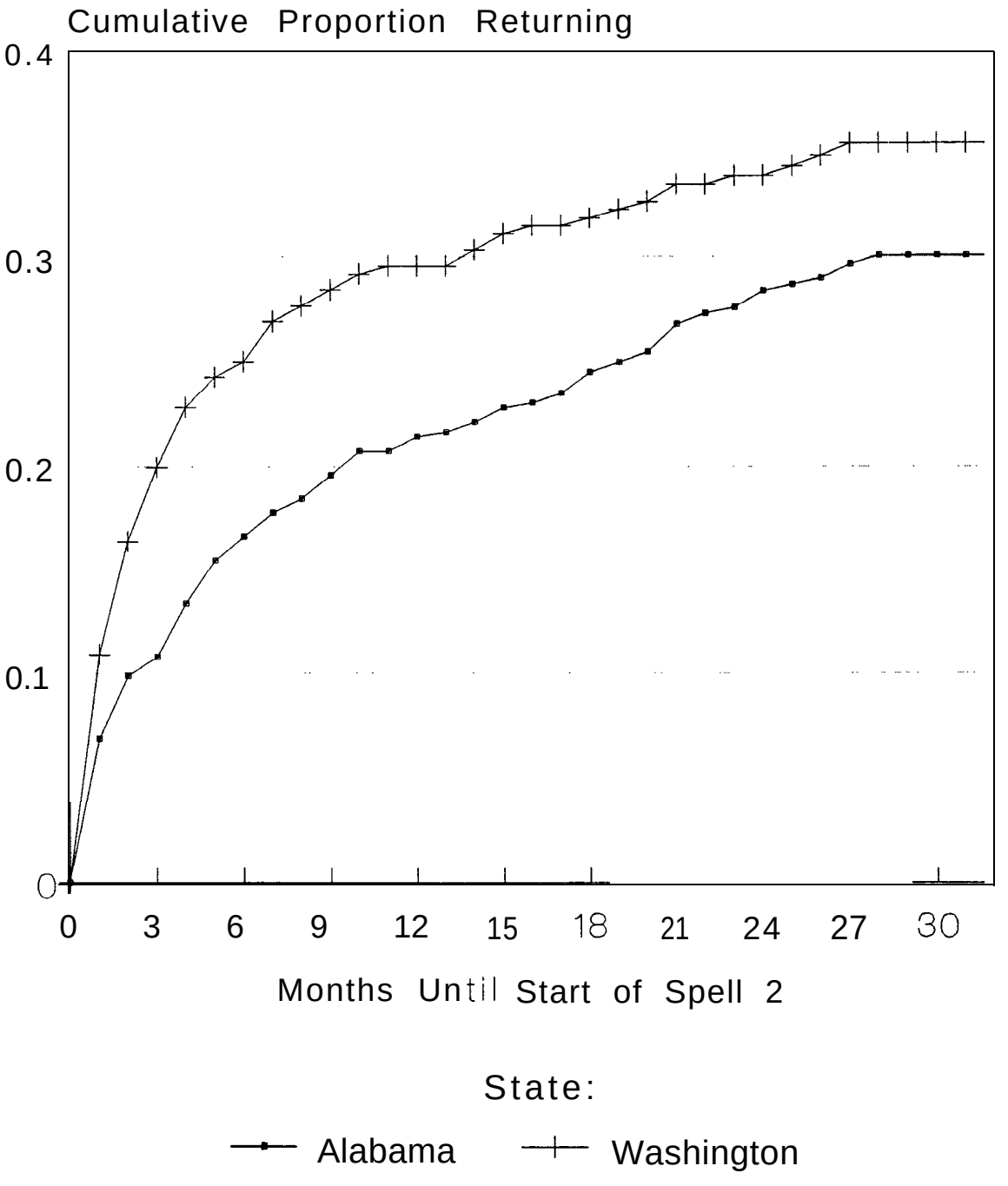
3. Costs of Participation

One of the goals of the Food Stamp Employment and Training (E&T) Program is to invest resources in a way that will enhance the self-sufficiency of participants and reduce their dependence on food stamps, thereby reducing food stamp costs. As in any public program, an efficient use of resources requires that they be targeted in a manner whereby they will achieve the greatest impact for the least cost. However, in order to do so, federal and state E&T planners and program managers must have information that enables them to identify needs so that they can develop strategies to meet them. One indicator of a household's need for E&T resources is the value of the food stamp allotments that it receives over time. Therefore, if this criterion of need were adopted, it would provide a basis for targeting E&T resources, and would help program managers and administrators reduce the costs of the program.

The total value of allotments provided to work registrant households during the 33-month observation period is shown in Table 3. Allotments valued at more than a half-million dollars

Figure 2

Rate of Cases Returning for Second Spell



($517,094) were provided to households in Alabama, while work registrant households in Washington received allotments valued at $255,978. Households in Alabama received an average of $1,127 during the period, somewhat larger than the $911 in coupons received by their counterparts in Washington.

The data in Table 3 indicate that multiple-spell households in both states received the largest share of allotments provided to work registrant households in the samples. While this group generated the greatest absolute cost, a smaller group of households--those that involved a long single spell--were more expensive to serve. This type of household received allotments that totaled an average of over $3,000 in Alabama and over $2,000 in Washington. In Alabama, the total of these costs was almost as large as that incurred from cases that experienced multiple spells.

These findings indicate that average total allotment costs are greatest for households that experience long single spells, but the largest share of allotment costs is attributable to multiple-spell households. This pattern suggests that the group of work registrant households which experiences more than one spell is considerably larger than the group which experiences a single long spell. In fact, as shown in Table 3, this is the case. For example, although cases that had a single long spell in Alabama accounted only for 15.5 percent of the sample of work registrant households that entered the program in early 1986, they accounted for 41.4 percent of the total cost of allotments provided to households in the sample through late 1988. Similarly, only 13.2 percent of the sample from Washington had long single spells, but they received 29.2 percent of the food stamp allotments to sample households from that state.

Our analysis of the effects of different characteristics of work registrant households on the patterns of participation and the costs of participation suggests that larger households may find it

TABLE 3

TOTAL COST PER CASE BY PATTERN OF PARTICIPATION

	Alabama	Washinaton
All Cases		
Value of all allotments	$517,094	$255,978
Average per case	$1,127	$911
Sample Size	459	281
Single-Spell Cases		
Single Spell l-3 Mos.		
Value of all allotments	$41,110	$20,896
Average per case	$215	$255
Percentage of sample	41.6%	29.2%
Percentage of allotment	8.0%	8.2%
Single Spell 4-6 Mos.		
Value of all allotments	$41,813	$31,505
Average per case	$589	$470
Percentage of sample	15.5%	23.8%
Percentage of allotment	8.1%	12.3%
Single Spell > 6 Mos.		
Value of all allotments	$213,998	$74,653
Average per case	$3,014	$2,018
Percentage of sample	15.5%	13.2%
Percentage of allotment	41.4%	29.2%
Multiple-Spell Cases		
Value of all allotments	$220,173	$128,924
Average per case	$1,747	$1,357
Percentage of sample	27.5%	33.8%
Percentage of allotment	42.6%	50.4%

more difficult to achieve a level of earnings that will make them ineligible for food stamps (see the analysis presented in Appendix D of our full report [Usher et al., 1989]). Instead, their earnings simply lead to their receiving a smaller allotment. Generally, however, the impact of individual and household characteristics on patterns of participation is rather weak.

E. CONCLUSIONS

The findings of this study, based on a longitudinal analysis of a unique entry-cohort sample, yield some new perspectives about the participation of work registrants in the FSP. In this section, we offer some concluding observations about the significance of the study's findings and their potential implications for administrators of the FSP and state E&T programs. We also point out areas for further research that may help confirm the findings of this exploratory study.

1. Patterns of Participation by Work Registrants

Most of the work registrant households examined in this study received food stamps for six months or less, left the program, and did not return within two to two and a half years. Even though such households constituted a majority of the work registrant households that began receiving food stamps during early 1986 in the study sites, they consumed a relatively small proportion of the total food stamp allotments provided to this group. In Alabama, they represented 57 percent of the sample, but accounted only for 16 percent of the total cost of allotments. Similarly, in Washington, they comprised nearly 53 percent of the sample, but received only 20 percent of food stamp allotments.

The largest share of food stamp allotments provided to work registrant households in this study was consumed by households that experienced multiple spells within two to two and a half years after they were initially certified. Although such cases do not represent more than a third of the work registrants who began receiving food stamps during the study period, they consumed

nearly half of the total food stamp allotments provided to sample households over the 33-month study period (42.6 percent in Alabama and 49.3 percent in Washington).

The group that generated the largest cost per household in the FSP consisted of cases that experienced a single spell that lasted longer than six months. Even though these cases constituted only 15.5 percent of the sample in Alabama and 13.8 percent of the sample in Washington, they consumed, respectively, 41.4 percent and 30.6 percent of the total allotments to the samples of work registrant households.

2. Opportunities for Targeting Employment and Training Resources

Some State and local food stamp agencies have been successful at targeting Quality Control error-reduction programs toward certain types of households by using error-prone profiles (see Usher and Duncan, 1985). In this case, however, we found that the impact of individual and household characteristics on patterns of participation by work registrants is not strong. Consequently, targeting E&T services toward particular types of work registrants or their households might entail a rather high degree of error.

An appealing alternative to targeting on the basis of personal or household characteristics was suggested by the pattern of cost data that emerged from this study. If our findings were supported by a larger-scale study, they might encourage the adoption of "self-selection" as an efficient method for targeting E&T services toward work registrants who are likely to generate the greatest cost to the FSP. The approach would involve a very simple screening process based on two criteria. The first would be the length of time that an initially certified work registrant has been participating in the program. When work registrant households reach the sixth month of an initial spell, it would be appropriate to target them for careful attention, if the findings of this

study were confirmed. Given that such households are at greatest risk of enduring a long and expensive spell, special intervention at this point might be appropriate.

Second, during all application interviews with work registrant households, eligibility specialists could ascertain whether the household had previously participated and been required to register for work Again, based on our findings on multiple-spell cases, it might be cost-effective to monitor the job-search efforts of such work registrants more carefully. Such monitoring could be undertaken only if a small amount of resources was devoted to maintaining current WR/JS requirements for other work registrants. The information that we obtained on the WR/JS process in Alabama and Washington suggests that only a small level of effort may be required because the patterns of participation that we observed in the two study areas of each state emerged in the face of what can best be described as a minimal job search requirement.

3. Further Research

Our research revealed very similar patterns of participation and program costs across samples drawn from two quite different states. If these findings were supported by larger-scale studies, such as the E&T evaluation being sponsored by FNS, they might provide the basis for a strategy to enhance the efficiency and effectiveness of the work registration and job-search process. The data base used by Burstein and Visher (1989) already provides the foundation for longitudinal analyses of cross-sectional samples of the food stamp work registrant caseload. Soon, the E&T evaluation will offer more up-to-date information, although the follow-up period will not be as long.

REFERENCES

Abt Associates, Inc. "Food Stamp Program Operations Study: Report on the Census of State Operations: Job Search." Cambridge, MA: Abt Associates, 1987.

_____. "Report to Congress on Program Implementation: Evaluation of the Food Stamp Employment and Training Program." Report prepared for the Food and Nutrition Service, U.S. Department of Agriculture, Cambridge, MA: Abt Associates, 1988.

Allin, S., and H. 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.

Archdiocese of New Orleans, Office of the Social Apostolate. "Elderly Commodity Supplemental Food Program: Survey Results 1984." New Orleans, LA: Office of the Social Apostolate of the Archdiocese of New Orleans, 1984.

Balsam, AL, and B.L. Rogers. "Service Innovations in the Elderly Nutrition Program: Strategies for Meeting Unmet Needs. Report prepared for the American Association of Retired Persons, Andrus Foundation. Medford, MA: Tufts University School of Nutrition, 1988.

Bane, M.J., and D.T. Ellwood. "The Dynamics of Dependence: The Routes to Self-Sufficiency." Report to the U.S. Department of Health and Human Services. Cambridge, MA: Urban Systems Research and Engineering, Inc., 1983.

Beebout, H. "Patterns of Eligibility and Participation Growth in the Food Stamp Program." Memorandum to Judi Reitman. Washington, D.C.: Mathematica Policy Research, Inc., 1981.

Betts, N.M. "Nutrition Perspectives on Aging." American Behavioral Scientist, vol. 32, no. 1, 1988, pp. 17-30.

Bickel, G., and M. MacDonald. "Assets of Low Income Households: New Findings on Food Stamp Participants and Nonparticipants. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, 1981.

Bowman, B.B., and LH. Rosenberg. "Assessment of the Nutritional Status of the Elderly." The American Journal of Clinical Nutrition, vol. 35, 1982, pp. 1142-1151.

Brandeis University, The Center for Human Resources, and Abt Associates Inc. "Food Stamp Work Registration and Job Search Demonstration." Final report prepared for U.S. Department of Agriculture, Food and Nutrition Service. Waltham, MA: Brandeis University, 1986.

Brown, C., S. MacFarlane, R Paredes, and L Stark "The Homeless of Phoenix: Who Are They and What Should Be Done?" Phoenix, AZ: Consortium for the Homeless, 1983.

Brown, G. "End of Purchase Requirement Fails to Change Food Stamp Participation." Monthly Labor Review, vol. 3, no. 7, 1988, pp. 14-18.

Brown, M., S.R Johnson, and RL Rizek "Food Stamps and Expenditure Patterns: A Statistical Analysis." University of Missouri-Columbia. Report prepared under U.S. Department of Agriculture Grant No. 53-3244-g-188, 1982.

Burstein, N.R., and M.G. Visher. "The Dynamics of Food Stamp Program Participation." Report to the Food and Nutrition Service, USDA Cambridge, MA: Abt Associates, Inc., 1989.

Burt, M.R., and B.E. Cohen. America's Homeless: Numbers, Characteristics, and the Programs That Serve Them, Washington, D.C.: The Urban Institute Press, 1989a.

_____ "Differences among Homeless Single Women, Women with Children, and Single Men."' Social Problems, vol. 36, no. 5, 1989b, pp. 508-524.

_____. "Feeding the Homeless: Does the Prepared Meal Provision Work?" Volumes I and II. Report to Congress. Washington, D.C.: The Urban Institute, 1988a.

_____. "Review of Research on Homeless Persons." Washington, D.C.: The Urban Institute, 1988b.

Camil Associates. "Services to Applicants Required to be Registered with the U.S. Employment Service." Report prepared for the Office of Policy, Evaluation and Research, U.S. Department of Labor, Employment and Training Administration, Washington, D.C., 1979.

Carr, T.J., P. Doyle, and I. S. Lubitz. "Turnover in Food Stamp Participation; A Preliminary Analysis." Washington, D.C.: Mathematica Policy Research, Inc., 1984.

Chen, J.-S. A. "Simultaneous Equations Models with Qualitative Dependent Variables: A Food Stamp Program Participation and Food Cost Analysis." Ph.D. dissertation, University of Missouri, 1983.

Coe, R. "Participation in the Food Stamp Program." Working Paper Series. Ann Arbor, Institute for Social Research, University of Michigan, 1979.

_____. "An Examination of the Dynamics of Food Stamp Use." In Five Thousand American Families--Patterns of Economic Progress, vol. 7, edited by G.J. Duncan and J.N. Morgan. Ann Arbor, MI: Institute for Social Research, University of Michigan, 1979.

_____. "Participation in the Food Stamp Program, 1979." In Five Thousand American Families--Patterns of Economic Progress, vol. 10, edited by GJ. Duncan and J.N. Morgan. Ann Arbor, MI: Institute for Social Research, University of Michigan, 1983.

Cohen, B.E., and M.R. Burt. "Demographic Characteristics of the Homeless Derived from a New National Survey." Paper presented at the Population Association of America Annual Meeting, Baltimore, MD, 1989.

Commonwealth Fund Commission. "Old, Alone, and Poor: A Plan for Reducing Poverty Among Elderly People Living Alone." Baltimore, MD: The Commonwealth Fund Commission on Elderly People Living Alone, 1987.

Czajka, J. "Determinants of Participation in the Food Stamp Program: Spring 1979." Report to the Food and Nutrition Service, U.S. Department of Agriculture. Washington, D.C.: Mathematica Policy Research, Inc., 1981.

Davis, M.A., et al. "Living Arrangements and Dietary Patterns of Older Adults in the United States." Journal of Gerontology, vol. 40, no. 2, 1985, pp. 434-442.

_____. "Living Arrangements and Eating Behaviors of Older Adults in the United States." Journal of Gerontolow, vol. 43, no. 3, 1988, pp. s96-s98.

Devaney, B., P. Haines, and R. Moffitt. "Assessing the Dietary Effects of the Food Stamp Program." Volumes I--Conceptual Design and II-Empirical Results. Princeton, NJ: Mathematica Policy Research, Inc., 1989.

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

Ellwood, D.T. 'Targeting 'Would-Be' Long-Term Recipients of AFDC." Report to the U.S. Department of Health and Human Services. Washington, D.C.: Mathematica Policy Research, Inc., 1986.

Evans, R., B. Friedman, and L Hausman. "The Impact of Work Tests on the Employment Behavior of Welfare Recipients. U.S. Department of Labor, Employment and Training Administration, Washington, D.C., May 1976.

Farr, R.K., P. Koegel, and A Burnam. "A Study of Homelessness and Mental Illness in the Skid Row Area of Los Angeles." Los Angeles, CA: Los Angeles County Department of Mental Health, 1986.

Focus: HOPE, Food for Senior Citizens-Progress Report, September 1982-February 1983, Detroit, Michigan.

Food and Hunger Hotline. "Report on NYC Poverty, Emergency Feeding and Government Funds." New York: Food and Hunger Hotline, 1987.

Fraker, T., and R Moffitt. "The Effect of Food Stamps on Labor Supply: A Bivariate Selection Model." Journal of Public Economics, vol. 35, 1988, pp. 25-56.

Gueron, J.M. "Work-Welfare Programs. New Directions for Program Evaluation. San Francisco, CA: Jossey-Bass, 1988.

_____ "Work Initiatives for Welfare Recipients: Lessons from a Multi-State Experiment." New York: Manpower Demonstration Research Corporation, 1986.

Kirlin, J.A., and S.R Merrill. "A Longitudinal Study of Participation Patterns in the Food Stamp Program." Draft final report to the U.S. Department of Agriculture. Cambridge, MA: Abt Associates, Inc., 1985.

Kirlin, J.A. "A Longitudinal Analysis of Case Closures, Reopenings, and Benefit Changes in the Massachusetts NPA Food Stamp Program." Cambridge, MA: Abt Associates, Inc., 1982.

Kirschner Associates Inc., and Opinion Research Corp. "An Evaluation of the Nutrition Services for the Elderly, Volume II: Analytic Report." Washington, D.C.: Administration on Aging, Department of Health and Human Services, 1983.

Kumanyika, S., and E. Chee. Effects of Poverty on Dietary Adequacy in the Rural United States." Unpublished report, Department of Epidemiology, Johns Hopkins School of Hygiene and Public Health, 1987.

Long, S.K. "Multiple Program Participation Among Food Stamp Recipients." Final report prepared for the U.S. Department of Agriculture, Food and Nutrition Service. Washington, D.C.: Mathematica Policy Research, Inc., 1988.

Lubitz, I.S., and T.J. Carr. "Turnover in the Food Stamp Program in 1979: The Role of Trigger Events." Final report to the U.S. Department of Agriculture. Washington, D.C.: Mathematica Policy Research, Inc., 1985.

MacDonald, M. Why Don't More Eligibles Use Food Stamns? Discussion paper no. 292-75. Madison, WI: Institute for Research on Poverty, University of Wisconsin, 1975.

Maddala, G.S. Econometrics. New York McGraw-Hill Book Company, 1977.

Masters, S.H., and R Maynard The Impact of Supported Work on Long-Term Recipients of AFDC Benefits. Volume 3 of the Final Report on the Supported Work Evaluation. New York: Manpower Demonstration Research Corporation, 1981.

Mathematica Policy Research. "Final Report for the Food and Nutrition Service, USDA: Descriptive Tables Based upon Merged Wave 1 Data for the Core and Low-Income Samples of the 1985 CSFII." Washington, D.C.: Mathematica Policy Research, 1987.

Merck, C. "Turnover and Recidivism in the Food Stamp and Aid to Families with Dependent Children Programs." Final report to the U.S. Department of Health, Education, and Welfare. Washington, D.C.: Mathematica Policy Research, Inc., 1980.

Munro, H.N. "Nutritional Requirements in the Elderly." Hospital Practice, 1982, pp. 143-154.

Myrianthopoulos, M. "Dietary Treatment of Hyperlipidemia in the Elderly." Clinics in Geriatric Medicine, vol. 3, no. 2, 1987, pp. 343-359.

Ponza, M., and L. Wray. "Evaluation of the Food Assistance Needs of the Low-Income Elderly and Their Participation in USDA Programs." Final report prepared for the U.S. Department of Agriculture, Food and Nutrition Service. Princeton, NJ: Mathematica Policy Research, Inc., forthcoming.

Posner, B.M., and M.M. Krachenfels. "Nutrition Services in the Continuum of Health Care." Clinics in Geriatric Medicine, vol. 3., no. 2, 1987, pp. 261-274.

Quality Planning Corporation and Abel, Daft, and Earley. A Study of the Temporary Emergency Food Assistance Program (TEFAP). Prepared for the United States Department of Agriculture, Food and Nutrition Service. Washington, D.C.: U.S. Government Printing Office, 1987.

Roe, D.A. Geriatric Nutrition. 2nd Edition. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1987.

Ropers, R., and M. Robertson. "Basic Shelter Research Project: Report #4." Los Angeles, CA: UCLA School of Public Health, 1985.

Rosnow, M.J., T. Shaw, and C.S. Concord. "A Study of Homeless Mentally Ill Persons in Milwaukee." Milwaukee, WI: Human Services Triangle, Inc., 1985.

Ross, C. "The Food Stamp Program: Eligibility and Participation." Washington, D.C.: Congressional Budget Office, 1988.

Rossi, P.H.,' G.A. Fisher, and G. Willis. "The Condition of the Homeless in Chicago." Amherst, MA: Social and Demographic Research Institute, University of Massachusetts; Chicago, IL: National Opinion Research Center (NORC), 1986.

Roth, D., J. Bean, N. Just, and T. Saveanu "Homelessness in Ohio: A Study of People in Need." Columbus, OH: Ohio Department of Mental Health, Office of Program Evaluation and Research, 1985.

Rowland, D., and B. Lyons. "Medicare's Poor: A Background Report on Filling the Gaps in Medical Coverage for Low-Income Elderly Americans. Baltimore, MD: The Commonwealth Fund Commission on Elderly People Living Alone, 1988.

Ruggles, P. "Welfare Dependency and Its Causes: Determinants of the Duration of Welfare Spells." Paper presented at the Annual Meeting of the American Economic Association. Washington, D.C.: The Urban Institute, 1988.

Ryscavage, P., and A. Feldman-Ha&ins. Work Experience Data From SIPP. SIPP Working Paper No. 8703. Washington, D.C.: U.S. Bureau of the Census, 1987.

Schlenker, ED. Nutrition in Aging. St. Louis, MO: Times Mirror/Mosby, 1984.

Springs, R.C. "Food Stamp Participation Patterns in Seattle, Washington-1971." Final report to the State of Washington, Department of Social and Health Services. Washington, D.C.: Mathematica Policy Research, Inc., 1978.

The Urban Institute. "Planning a Food Stamp Employment and Training Program." Report prepared for the Office of Analysis and Evaluation, Food and Nutrition Service, U.S. Department of Agriculture. Washington, DC.: The Urban Institute, 1987.

_____. "The Effects of Legislative Changes in 1981 and 1982 on the Food Stamp Program." Report prepared for the Office of Analysis and Evaluation, Food and Nutrition Service, U.S. Department of Agriculture. Volume 1. Washington, D.C.: The Urban Institute, 1985.

Trippe, C., and H. Beebout. "Food Stamp Program Participation Rates Among the Poverty Population, 1980-1987." Current Perspectives on Food Stamp Program Participation. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, 1988.

Trippe, C. "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. Bureau of the Census. Survey of Income and Program Participation (SIPP), Research Panel, Wave 3. Washington, D.C., 1984.

U.S. Congress, Office of Technology and Assessment. Technolow and Aging in America Washington, D.C.: U.S. Government Printing Office, OTA-BA-264, June 1985.

U.S. Department of Agriculture, Food and Nutrition Service, Office of Public Information. Food Stamp Program Statistical Summary of Operations; Public Information Data Base, 1988. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, 1989a.

_____. Office of Analysis and Evaluation. Characteristics of Food Stamp Households: Summer 1987. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, 1989b.

_____. Characteristics of Food Stamp Households: Summer 1986. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, 1988.

_____. Final Report of the Second Set of Food Stamp Workfare Demonstration Projects. Washington, D.C.: U.S. Government Printing Office, 1987.

_____. The Characteristics of Food Stamp Work Registrants: 1984. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, 1986.

_____. "Nutrient Intakes: Individuals in 48 States, Year 1977-78." In Human Nutrition Information Service, Consumer Nutrition Division, Nationwide Food Consumption Survey 1977-78, Report I-2 Hyattsville, MD: U.S. Department of Agriculture, 1984.

U.S. Department of Health and Human Services and U.S. Department of Agriculture. Nutrition Monitoring in the United States-A Report from the Joint Nutrition Monitoring Evaluation

Committee. DHHS Publication No. (PHS) 86-1255. Washington, D.C.: U.S. Government Printing office, 1986.

U.S. Department of Health and Human Services, Public Health Services, Office of the Surgeon General. The Surgeon General's Renort on Nutrition and Health Washington, D.C.: Office of the Surgeon General, 1988.

U.S. Department of Health, Education, and Welfare. "Dietary Intake and Biochemical Findings." In First Health and Nutrition Examination Survey, United States, 1971-72, (HRA) 74-1219-1, 1974.

U.S. General Accounting Office. Homeless Mentally Ill: Problems and Options in Estimating Numbers and Trends. Washington, D.C.: GAO/PEMD-88-24, 1988.

_____. Work and Welfare: Current AFDC Work Program and Implications for Federal Policy. Washington, D.C., 1987.

_____. "An Aging Society: Meeting the Needs of the Elderly While Responding to Rising Federal Costs." GAO/HRD-86-135. Washington, D.C.: U.S. GAO, 1986.

_____ Food Stamp Work Reuuirements-Ineffective Paperwork or Effective Tool? Report to the Congress by the Comptroller General. Washington, D.C., 1978.

U.S. House of Representatives, Committee on Ways and Means. Background Material and Data on Programs within the Jurisdiction of the Committee on Ways and Means. Washington, D.C.: U.S. Government Printing Office, 1989.

U.S. Senate, Special Committee on Aging. "Aging America: Trends and Projections." Washington, D.C.: U.S. Department of Health and Human Services, 1987-88 Edition.

Usher, C.L., and ED. Duncan III. "Integrating Analysis and Management to Control Errors in the Food Stamp Program." Public Productivity Review, vol. 9, no. 1, spring 1985.

Usher, C.L, C.H. Gogan, and HP. Koo. "Long-term Participation in the Food Stamp Program by Work Registrants." Report prepared for the Food and Nutrition Service, U.S. Department of Agriculture. Research Triangle Park, NC: Research Triangle Institute, 1989.

Vernez, G., M.A. Burnam, E.A. McGlynn, S. Trude, and B. Mittman. Review of California's Program for the Homeless Mentally Disabled. Santa Monica, CA: The Rand Corporation, 1988.

West, D. "Effects of the Food Stamp Program on Food Expenditures: An Analysis of the BLS CES 1973-74 Diary Survey. Washington State University Research Bulletin. Pullman, WA: Washington State University, 1984.

Wolf, D.A. "Dynamics Analysis of Food Stamp Longitudinal Data: Design of an Econometric Model and Preliminary Results. Washington, D.C.: The Urban Institute, 1985.

Young, E.A. “Nutrition, Aging, and the Aged” Medical Clinics of North America, vol. 67, no. 2, 1983, pp. 295312.

APPENDIX A

HOUSEHOLD SURVEYS USED IN ESTIMATING FSP ELIGIBILITY, BY COVERAGE OF THE INFORMATION NECESSARY TO SIMULATE RESPONDENTS' ELIGIBILITY

TABLE A.1

HOUSEHOLD SURVEYS USED IN ESTIMATING FSP ELIGIBILITY, BY COVERAGE OF THE INFORMATION NECESSARY TO SIMULATE RESPONDENTS' ELIGIBILITY

Survey[a]	Income Accounting Period	Coverage of: Program Unit Composition	Gross Income[b]	Countable Deductions	Countable Assets
Consumer Expenditure Survey, Diary Portion (CESD)	Annual	Poor	Poor	Poor	Poor
Consumer Expenditure Survey (CES)	Quarterly	Poor	Poor	Good	Good
Michigan Panel Study of Income Dynamics (PSID)	Annual	Poor	Good	Good	Poor
Public Use Sample of the Decennial Census	Annual	Poor	Good	Poor	Poor
Survey of Income and Education (SIE)	Annual	Poor	Good	Poor	Poor
March Current Population Survey (CPS)	Annual	Poor	Good	Poor	Poor
1979 Income Survey Development Program (ISDP) Research Test Panel[c]	Monthly	Good	Excellent	Excellent	Good
Survey of Income and Program Participation (SIPP)	Monthly	Good	Excellent	Excellent	Good

SOURCE: Table 4, Trippe (1989).

[a]For a description of each of these surveys, see Appendix B, Trippe (1989).

[b]This refers to the quality of the income data, such as the extent of underreporting.

[c]The ISDP was developed as a pretest for SIPP and was discontinued after the 1979 test panel. The last and largest (1979) test panel of the ISDP sample contained only approximately 7,500 households, whereas each of the panels in the ongoing SIPP samples contain approximately 20,000 households.

APPENDIX B

SELECTION BIAS MODELS

As discussed in the text, estimates of the dietary effects of the FSP are usually based on cross-sectional food-use data for both FSP participants and eligible nonparticipants. Since FSP participants are a self-selected group of households, selection bias arises if unmeasured or unobserved differences occur between participants and nonparticipants that would exist even in the absence of the FSP, and that are correlated with the nutrient availability of households. Two types of selection bias are considered in this study. The first type, Type A, arises when FSP participants and eligiile nonparticipants exhibit different levels of food use and, hence, nutrient availability, holding constant all other observed characteristics, even prior to participation in the FSP. The second type of selection bias, Type B, exists if FSP participants and eligible nonparticipants exhibit different marginal propensities to consume food (MPC) out of income. In this case, those households that ultimately participate in the FSP show an increase in food consumption (and nutrient availability) that differs in magnitude from what would be experienced by eligiile nonparticipants if they were to participate. The following discussion presents the selection bias models in equation form.

The following set of equations represent Type A selection bias in model form:

$$(1) \quad N_{k1} = \alpha_k + \beta_k Y_1 + \delta_k B_1 + X_1\phi_k + \varepsilon_{k1}$$

$$(2) \quad P_1^* = Z_1\Psi + \upsilon_1$$

$$(3) \quad Pi = 1 \text{ if } P_1^* \geq 0;$$
$$= 0 \text{ if } P_1^* < 0$$

where P_i^* is an index for the "propensity" to participate in the FSP and Z_i is a set of variables that affect that propensity. Included in Z_i, among other things, is the potential food stamp and cash income.[38] The dummy variable P, is one if the household actually participates in the FSP and is zero if not. Equations (2) and (3) represent a standard probit model for a dummy dependent variable. If the error terms ε_{ki} and υ_i are' correlated, Type A selection bias occurs. If they are positively correlated, ordinary least squares (OLS) estimates of (1) yield estimates of δ that are biased upward; if they are negatively correlated, the opposite occurs.

In Type B selection bias, it is assumed that different households have different MPCs out of income. The following model depicts this case:

$$(4) \quad N_{ki} = \alpha_k + \beta_{ki}(Y_i + \gamma_k B_i) + X_i\phi_k + \varepsilon_{ki}$$

$$(5) \quad \beta_{ki} = W_i\lambda_k + w_{ki}$$

$$(6) \quad P_i^* = Z_i\Psi + \upsilon_i$$

$$(7) \quad P_i = 1 \text{ if } P_i^* \geq 0;$$
$$= 0 \text{ if } P_i^* < 0$$

In this model there is a single income variable, $Y + \gamma B$, where γ is the ratio of the bonus MPC to the cash-income MPC. The coefficient on this income variable, β_{ki}, is the MPC for income in general, and it has a subscript "i" to represent the fact that it is allowed to differ for different households. Thus, this model allows the MPC out of income to differ between FSP participants

[38]Specifically, the variables used as predictors of the likelihood of participating in the FSP are weekly cash income; potential food stamp benefit; race of the household head (1 = black, 0 = non-black); dummy variables for whether the household has a male head only or a female head only; dummy variables for the age, education, and employment status of the female household head (or male household head if no female household head is present); and a dummy variable for whether the household owns its home.

and eligible nonparticipants. As shown in equation (9), the MPC for income is assumed to be a function of a set of variables denoted by W and by an unobserved error term, w_1.[39]

In this model, selection bias exists if the error terms w_1 and u_1 are correlated. If, for example, they are positively correlated, it would imply that those households whose MPCs are high even in the absence of the FSP (high W,) are more likely to participate in the FSP.

The estimation of this model also allows the error terms ε_1 and u_1 to be correlated. Thus, the model includes both Type A and Type B selection bias. They are different types of selection bias, because in one case (Type A) we are testing whether households with different levels of nutrient availability are more or less likely to be FSP participants, whereas in the other (Type B) we are testing whether the change in nutrient availability per dollar of income is greater or smaller for FSP participants.

One of the main interests in estimating this model is whether the estimate of γ is or is not equal to 1, where the coefficient γ is the estimated ratio of the MPC for the food stamp benefit to the cash-income MPC. However, it is possible that this ratio is affected by Type B selection bias because it could be that those who are FSP participants have higher MPCs, in the first place, out of both income and food stamp benefits. The estimates of the selection bias model will indicate whether this is indeed the case.

[39]The set of variables assumed to influence the MPC for cash income are race, household size in adult-male-equivalent persons, the number of guest meals eaten from household food supplies, dummy variables for the age of the female household head (<35, 35-59, and 60+), and dummy variables for whether the household lives in the South or in a suburban location.

APPENDIX C

MEASURES OF HOUSEHOLD COMPOSITION AND CALCULATION OF ADULT MALE EQUIVALENT PERSONS AND EQUIVALENT NUTRITION UNITS

A consistent finding of. previous research based on food-use data is that household size and composition have important effects on food expenditures and nutrient availability. Larger households and households with certain types of members (e.g., teenage males) have been found to consume greater quantities of food, leading to higher food expenditures and greater nutrient availability than are found among households of other sizes and/or composition. Three basic measures of household composition are used in research on food-use data:

1. Household size
2. Household size in adult-male-equivalent (AME) persons
3. Household size in equivalent nutrition units (ENU)

The first measure of composition-household size-is simply the number of persons in the household, and is the easiest measure to use in analyses of food expenditures and nutrient availability. It is typically adjusted to 21-meal-at-home equivalent persons to account for differences in the number of meals eaten at home (21 meals-at-home in a week equals one person). One problem with household size and household size in 21-meal-at-home persons is that all household members are treated identically, and, thus, the age and sex of the household members are assumed to be unrelated to the amount of food use. This assumption is questionable, since it is likely that variations in either food expenditures or nutrient availability can be attributed in part to the age and sex, as well as the number, of household members. For example, a household that consists of a woman and two children has different nutritional requirements (and,

hence, is likely to have different food expenditures) than does a household of similar size with three adult males.

The second measure of composition--household size in adult-male-equivalent persons--adjusts actual household size for the age and sex of the household members. The adjustment procedure weights each household member by the nutritional requirements of that member relative to the nutritional requirements of an adult male age 23 to 50.[40] The sum of these weights gives household size in adult-male-equivalent persons. For example, consider the following household with a male and female head each age 30, a boy age 15, and a girl age 12:

Household Member	Requirements for Food Energy (Kilocalories)	Relative Needs
Male, age 30	2,700	1.00
Female, age 30	2,000	.74
Male, age 15	2,800	1.04
Female, age 12	2,200	.81
Household size in adult-male-equivalent persons		3.59

The number of adult-male-equivalent persons in this household, based on the relative needs of the household members for food energy, is 3.59. Household size in adult-male-equivalent persons is used as a scale for the income variables used as independent variables for the analysis reported in this paper. Table C.1 presents mean values for the nutrient-specific adult-male-equivalent persons and scaled income variables. The final measure of composition-household size in

[40]These requirements are obtained from the 1980 Recommended Dietary Allowances (RDA), which were determined by the National Research Council of the National Academy of Sciences.

equivalent nutrition units-is the number of adult male equivalents in the household who eat meals from the household food supplies. It adjusts actual household size for both the age-sex composition of the family members and the proportion of meals eaten away from home. Continuing with the previous example, suppose that the male head ate two-thirds of his weekly meals at home, and the other household members ate all of their meals at home:

Household Member	Relative Needs		Proportion of Meals Eaten at Home		Equivalent Nutrition Units
Male, age 30	1.00	x	.67	=	.67
Female, age 30	.74	x	1.00	=	.74
Male, age 15	1.04	x	1.00	=	1.04
Female, age 12	.81	x	1.00	=	.81
Household size in equivalent nutrition units					3.26

Household size in equivalent nutrition units for this hypothetical household, based on the relative needs for food energy, is 3.26 persons. Equivalent nutrition units are used as scales for the nutrient availability variables for this analysis, and mean values of the nutrient-specific equivalent nutrition units and scaled availability variables are presented in Table C.2.

TABLE c.1

MEAN VALUES FOR NUTRIENT-SPECIFIC AME AND SCALED INCOME VARIABLES

Explanatory Variables	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Vitamin B_6	Calcium	Phosphorus	Magnesium	Iron
AME	2.63	2.59	2.65	3.08	2.63	2.70	2.76	3.67	3.65	2.77	4.74
Income Per AME ($/week)											
Cash Income	$47.23	$44.19	$43.40	$36.63	$45.66	$44.32	$40.63	$33.83	$33.96	$41.47	$29.28
Food Stamp Benefit[a]	5.42	5.36	5.24	4.33	5.33	5.19	4.94	3.78	3.61	5.01	3.06
Food Stamp Benefit-Participants	10.64	10.72	10.46	8.66	10.66	10.36	9.66	7.66	7.62	10.02	6.12
Subsidy Value of School Lunches	1.25	1.35	1.30	1.13	1.26	1.23	1.25	.89	.89	1.23	.70
Subsidy Value of School Breakfasts	.17	.19	.18	.16	.18	.17	.18	.12	.12	.17	.10
Value of Home-Grown Food	.53	.49	.48	.42	.52	.50	.46	.39	.39	.46	.35
Value of Gift/Pay Food	.88	.83	.82	.68	.85	.83	.77	.63	.63	.79	.53

SOURCE: 1979-80 Survey of Food Consumption In Low-Income Households.

'Includes zeros for nonparticipants.

TABLE C.2

MEAN VALUE FOR NUTRIENT-SPECIFIC ENU AND SCALED NUTRIENT AVAILABILITY VARIABLES

	ENU	Daily Availability Per ENU
Food Energy	2.27	3,988 Kcal
Protein	2.26	129 mg
Vitamin A	2.31	11,414 IU
Vitamin C	2.70	139 mg
Thiamin	2.28	2.71 mg
Riboflavin	2.33	3.23 mg
Vitamin B_6	2.41	2.56 mg
Calcium	3.17	1,000 mg
Phosphorus	3.13	1,710 mg
Magnesium	2.41	464 mg
Iron	4.14	16.9 mg

SOURCE: 1979-80 Survey of Food Consumption in Low-Income Households.