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**Determinants of
Participation in the
Food Stamp Program:
A Review of the Literature**

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CONTENTS

Section

LIST OF TABLES	v
EXECUTIVE SUMMARY	vii
I. INTRODUCTION	1
II. THEORETICAL APPROACHES AND DATA LIMITATIONS	5
A. THEORETICAL APPROACHES TO MODELING THE PARTICIPATION DECISION	5
1. The Static FSP-Only Approach	6
2. The Dynamic FSP-Only Approach	7
3. The Static Multiple-Decision Approach	8
B. DATA LIMITATIONS	12
1. Determining the Eligibility of Nonparticipants	12
2. The Underreporting of Participation in Household Surveys	14
3. Limitations in the Type of Information Available in Household Surveys	15
C. IMPLICATIONS OF THE RESEARCH DATA AND DESIGNS	16
III. A REVIEW OF THE LITERATURE	19
A. DIRECT SURVEY EVIDENCE ON REASONS FOR NONPARTICIPATION	20
B. ANALYSES OF PARTICIPANT AND NONPARTICIPANT CHARACTERISTICS	27
C. MULTIVARIATE ANALYSES	29
1. Studies Based on the Static FSP-Only Approach	32
2. Studies Based on the Dynamic FSP-Only Approach	38
3. A Study Based on the Static Multiple-Decision Approach	47
IV. SUMMARY, IMPLICATIONS, AND CONCLUSIONS	51
A. A SUMMARY OF THE FINDINGS IN THE LITERATURE	51
1. Reasons for Nonparticipation	52
2. Variations in Participation Rates Across Eligibles	52
3. Factors in the Participation Decision	53

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TABLES

Table 1	The Percentage Distribution of Responses of FSP-Eligible Households to Questions on Their Nonparticipation, from Five Studies Using Direct Survey Evidence on Reasons for Nonparticipation	22
Table 2	Estimated Rates of Household Participation, by Selected Household Characteristics, from Five Studies Using Tabular Analysis	30
Table 3	The Direction and Significance of the Estimated Effects of the FSP Benefit Amount and Selected Household Characteristics on the Probability of Participation in the FSP, from Eight Multivariate Analyses Based on the Static FSP-Only Approach	34

B. IMPLICATIONS: THE NEED FOR FUTURE RESEARCH	54
1. Reasons for Nonparticipation	54
2. Factors Associated with Participation	55
3. Factors Associated with Entry and Exit	56
4. Modeling the Participation Decision	57
C. CONCLUSIONS	58
REFERENCES	59

EXECUTIVE SUMMARY

While it is unreasonable to expect that all eligible households will participate in the Food Stamp Program (FSP), the level of participation among eligible households, or the participation rate, has become a commonly used criterion for evaluating the performance of social programs. Recent studies based on the best available data estimate that 60 percent of eligible households participate in the FSP. The fact that a significant proportion of eligible households do not participate has led to considerable interest in the reasons for nonparticipation. This report reviews the literature on nonparticipation, focusing on several specific questions:

- What are the principal reasons eligible persons or households do not participate in the FSP?
- How do participation rates vary across different types of households? What are the reasons for that variation?
- On what basis do eligible households make their decisions regarding participation? How might changes in program structure or operations influence those decisions?

Approaches Used in the Existing Research

To answer these questions, the studies reviewed here have employed three general types of analyses: (1) analysis of direct survey evidence on reasons for nonparticipation, (2) tabular analysis of how participation rates vary by household characteristics, and (3) multivariate analysis of the factors that significantly increase or decrease a household's probability of participating in the FSP.

The studies based on direct survey evidence examine the responses of survey respondents to questions regarding their reasons for nonparticipation in the FSP; these studies are therefore useful in answering the first question listed above. The tabular analyses, on the other hand, allow investigation of variations in participation rates across households. These studies calculate participation rates for different subgroups of the eligible population, identifying groups that participate at especially high or low rates. Multivariate analysis, the third type, can also identify subgroups of the eligible population that are more or less likely to participate in the FSP, as well as provide insights into the participation decision itself.

Studies employing multivariate analysis tend to use one of three approaches: (1) the static FSP-only approach, (2) the dynamic FSP-only approach, and (3) the static multiple-decision approach. These approaches vary substantially in the way they model the participation decision. The first two approaches do not account for the interdependence of relevant household decisions (such as employment decisions and decisions to participate in other government assistance programs); they examine the FSP participation decision in isolation. In contrast, the multiple-decision approach attempts to model not only the FSP participation decision but also decisions the household makes in conjunction with that decision. Another difference among these three approaches is that the dynamic FSP-only approach examines households over time, whereas the other two approaches do not. These two approaches (the static

likely to leave the program, than 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.

Factors in the Participation Decision

One of the studies reviewed here explicitly modeled the choices households face in making their participation decisions. The analysis was limited, however, to a subset of the FSP-eligible population--female-headed households also eligible for AFDC benefits. The findings of this study included:

- Households eligible for relatively high maximum food stamp benefits were more likely to participate in the program than those eligible for lower benefits.
- The wage rate, net of taxes, that a household head received seemed to play a significant role in the participation decision. Eligible households in which the head received a relatively high wage were less likely to participate in the FSP than 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 significant factor in the participation decision.

In addition to the findings listed above, the results of this study generally confirmed the findings from other studies based on more restrictive models of the household participation decision. In particular:

- Households headed by an older or a relatively more educated head were less likely to participate in the FSP than otherwise comparable households.
- Minority status and a larger number of children under age 11 in the household increased the probability of participation in the FSP.

FSP-only approach and the static multiple-decision approach) examine households at only one time and thus do not account for past events or expectations about the future.

Findings

The studies reviewed in this report vary substantially in the data used, the methodologies employed, and the assumptions made. It is significant that, despite the many differences, several consistent findings emerge from the various analyses.

Reasons for Nonparticipation

- When asked why they were not participating in the FSP, nonparticipants tended to respond that they did not know they were eligible, that they ~~did not need~~ the stamps, or that the costs of participation, such as administrative hassles, stigma, and distance to the program office, outweighed the potential benefits.

Variations in Participation Rates Across Eligibles

- Eligible households that were headed by a single man, an employed person, or a relatively more educated person, as well as those that owned their homes, were less likely to participate in the FSP than otherwise comparable households.
- In contrast, eligible households that were headed by a single woman, that contained children, or that were nonwhite, as well as larger households, were more likely to participate in the FSP than otherwise similar households.
- Eligible households that had lower incomes, and were therefore 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 already receiving other forms of assistance were needier, had better information about the FSP, had less adverse feelings about participation in government assistance programs, had better access to program offices, or had less additional effort required of them to meet FSP eligibility certification requirements (or some combination of the above) than similar households that were not receiving assistance.
- Eligible households headed by an elderly person were less likely to participate in the FSP, but if participating were less likely to leave the program, than otherwise comparable households.
- Eligible households that were nonwhite or were receiving AFDC, as well as those with no earner present, were more likely to begin participating in the FSP, and if participating were less

household characteristics on the probability of participation. In addition, these studies examined households at only one time, ignoring the effects on the participation decision of both past events and expectations of future events.

- The studies based on the dynamic FSP-only approach avoided this limitation of the static approaches by examining the effects of changes in a household's circumstances over time on the participation decision. But like the static FSP-only studies, these failed to account for the interdependence of household decisions and thus may also have produced biased results.
- The study based on the static multiple-decision approach most explicitly modeled the participation decision by incorporating in the analysis other relevant household decisions. This approach requires advanced econometric modeling, however, and is therefore more complex and difficult to implement. In addition, the approach does not account for the influence of past events or expectations of future events.
- Finally, most of the existing studies are based on data collected before implementation of the 1977 Food Stamp Act. That Act changed several significant rules of the program, as have more recent legislative actions. As a result, the studies' findings do not necessarily apply to the FSP in its present form.

In spite of these limitations, evidence on variations in program participation rates by socioeconomic factors is consistent across studies and is probably reliable. But at the same time, the extant studies provide little information to support policy decisions aimed at changing the participation rate for any specific socioeconomic group. In other words, we may know who does not participate, but we cannot be certain about the underlying reason why. Thus, we cannot recommend ways to influence the participation decisions of eligible nonparticipants.

Recommendations for Future Research

This review suggests four general recommendations for future research:

- Seek and apply better methods of investigating how low-income households acquire information and make program participation decisions. Understanding these decision processes requires a less structured and more probing method of data collection than a survey of households. Anthropologists' ethnographic methods of investigating the behavior of other cultures, and market researchers' focus group methods of predicting consumer behavior, are promising research approaches.
- Update the research on how participation rates vary across socioeconomic groups. Many of the studies on this topic were based on data from the period before the purchase requirement was eliminated from the FSP. The results from the existing studies thus may not be applicable to the current program.

Limitations

The results presented in these studies were affected to varying degrees by both measurement problems and inappropriate conceptual frameworks. The principal data available for research on the determinants of FSP participation are from nationally representative surveys of households, such as the Panel Study of Income Dynamics or the Income Survey Development Program. Several significant measurement problems are inherent in the use of these surveys to measure participation, eligibility, and the motivations underlying the household's participation decision:

- Although FSP participants can be identified if the survey asked whether the household was receiving food stamps, underreporting of food stamp receipt is a pervasive problem in household surveys.
- Program eligibility is not directly observable but must instead be approximated using available information on relevant household characteristics. Estimation of a household's eligibility for the FSP is difficult, since survey data provide only a portion of the information needed to replicate program eligibility criteria, and those data are subject to various reporting and measurement errors.
- Information on the underlying motivation for a household's participation decision is very limited in household surveys. These surveys tend to collect information on household and individual characteristics, but they generally do not ask more detailed, probing questions regarding participation.
- Errors in estimating household eligibility can be particularly severe in studies that examine direct survey evidence on reasons for nonparticipation because the distribution of reasons given by "eligible" households is very sensitive to the estimation of their eligibility.

The interpretation of the studies reviewed is also limited by the approach used or by the conceptual framework underlying the approach. In particular:

- Although tabular analysis is helpful in identifying subgroups of the eligible population that have especially high or low participation rates, results from this type of analysis can be misleading. For example, relatively low participation rates among households headed by high school graduates may be due to the fact that this group has higher earnings than other households; education itself may not influence the participation decision.
- All of the approaches used in the studies employing multivariate analysis had substantial limitations. For instance, the studies based on the static FSP-only approach did not account for the interdependence of household decisions and therefore may have produced biased estimates of the magnitude of the effects of

Updating this research using the Survey of Income and Program Participation (SIPP) could confirm whether the earlier findings are still applicable to today's population of FSP eligibles.

- Conduct further research on how changes in household circumstances influence program entry and exit. Although a few studies examined how changes in employment status or household composition affected movements into or out of the FSP, more could be learned from better specified models of the set of relevant household decisions, a longer observation period, and larger samples. Such research might provide policy guidance on how to facilitate access to the FSP while, at the same time, minimizing long-term dependence on the program.
- Model the participation decision more explicitly. Only one of the studies reviewed here attempted to model the household's FSP participation decision along with the household's choices regarding employment and participation in other assistance programs. That study examined, however, only a portion of the FSP-eligible population. Hence, further research of this type is likely to improve our understanding of the participation decision.

I. INTRODUCTION

The purpose of the Food Stamp Program (FSP) is to enable low-income households to achieve and maintain a nutritious diet by increasing their food purchasing power. The U.S. Congress has defined the target population for the FSP through legislated eligibility requirements. Generally, 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.

Households actually receive food stamps, however, only if they apply for the benefits and are determined to be eligible. While it is unreasonable to expect universal participation among the eligible population, given the diversity of individual circumstances, there is considerable interest in the extent of nonparticipation, the patterns of nonparticipation, and the reasons why some eligibles do not participate.

In fact, the program participation rate (the ratio of participants to eligibles) has become one of the most commonly used criteria in evaluating the performance of social programs (Warlick, 1981). In particular, the participation rate is the primary measure of the extent to which the target population is being served by the program; and since the rate also measures nonparticipation, it is a key indicator of the extent to which the target population's needs are not being met.

Although the overall participation rate is a useful summary measure of the performance of the FSP, there is equal interest in several more specific questions:

- What are the principal reasons eligible persons or households do not participate in the FSP?
- How do participation rates vary across different types of households? What are the reasons for that variation?

- On what basis do eligible persons or households make their decisions regarding participation? How might changes in program structure or operations influence those decisions?

The research literature on the determinants of FSP participation attempts to answer these questions. That literature is marked by diverse methods, data sources, and research purposes, as well as attendant variations in the research results, so that synthesizing the findings is not a simple task. This review of the literature on FSP participation offers a critical evaluation of the research on why some eligibles are not participating in the FSP, how participation rates vary across subgroups of eligibles, and the factors shown to significantly influence the participation decision.¹ The report also identifies gaps in the literature and suggests avenues for future research.

The importance of understanding the reasons for nonparticipation is closely tied to the level of nonparticipation. Doyle and Beebout (1988) and Ross (1988), using the best available data,² estimated that 58 percent to 60 percent of eligible households participate in the FSP, implying that a significant minority do not participate.

Although this review focuses on the factors that induce households to participate or not to participate in the FSP, rather than participation rates per se, we should note that the existing studies vary widely in their estimates of the level

¹U.S. GAO (1988a) and, to a lesser extent, the President's Task Force on Food Assistance (1984), offer other reviews of the same literature.

²The participation rates reported in Doyle and Beebout and one set of the rates presented in Ross are estimated using administrative data to obtain the number of participants in the FSP (the numerator of the participation rate) and data from the Survey of Income and Program Participation (SIPP) to estimate the number of eligibles (the denominator of the participation rate). Trippe (1989) asserts that these data sources pose significantly fewer measurement problems than the other sources available and that they therefore yield the most reliable results.

of FSP participation. As explained in much greater detail in Trippe (1989), the extent of variation in these rates is the result of differences in methodology, data sources, and definitions of the participation rate itself. Three definitions of the participation rate are used in the literature:

- the household participation rate: the ratio of the number of participating households to the number of eligible households;
- the individual participation rate: the ratio of the number of individuals participating in the FSP to the number of eligible individuals; and
- the benefit rate: the ratio of the amount of FSP benefits actually issued to participants to the amount of benefits that would have been issued had all eligibles participated.

Each definition has its advantages, depending on the research question being asked. The individual participation rate is most useful in analyzing participation by specific subgroups of the target population, and the benefit rate is perhaps the best overall measure of the effectiveness of the FSP in meeting the needs of its target population. On the other hand, the household participation rate is most commonly used in studies about participation behavior, since researchers tend to view the FSP participation decision as one made by the household as a unit and since the household is the case unit for FSP purposes. It is that definition that is used in most of the studies reviewed in this report.

The remainder of the report is organized as follows. Section II first offers insight into the three main theoretical approaches followed in modeling the decision to participate in the FSP. This section then explains the data limitations inherent in the nationally representative surveys used in most of the studies that bear on the question of FSP participation. Section III critically reviews the literature on the reasons for nonparticipation cited by eligible nonparticipants, the characteristics of

eligible nonparticipants, and the determinants of FSP participation. Section IV summarizes both the findings reported in this literature and the main limitations of the studies reviewed. Finally, this section identifies four primary gaps remaining in the literature and offers recommendations of how those gaps could be filled.

II. THEORETICAL APPROACHES AND DATA LIMITATIONS

This section provides a methodological context for the studies on the determinants of FSP participation. Section A describes three theoretical approaches used in modeling the participation decision, while section B previews the research problems inherent in all the research, including the direct survey and tabular analyses. Most of these problems can be traced to limitations in the data available in the nationally representative surveys on which the analyses are based. Finally, section C summarizes the implications of these methodological limitations.

A. THEORETICAL APPROACHES TO MODELING THE PARTICIPATION DECISION

Multivariate analyses of the determinants of FSP participation generally follow, explicitly or implicitly, one of three basic conceptual approaches to modeling households' decisions to participate.³ The first two, defined below as the static and the dynamic FSP-only approaches, assume that the decision to participate is made in isolation from other decisions, such as whether to work and whether to apply for other forms of public assistance. The third, defined as the static multiple-decision approach, takes a more behavioral perspective and assumes that the household arrives at these decisions simultaneously or in combination with one another.

³As noted earlier, we use the convention employed in most of the studies reviewed of viewing the household as the decision-making unit. The use of the household as the decision-making unit is somewhat arbitrary; research on other aspects of consumer behavior are often based on other definitions of the decision-making unit.

1. The Static FSP-Only Approach

The studies based on the static FSP-only approach implicitly assume that households arrive at the decision to participate in the FSP with only limited information. Household members examine their current financial circumstances, without reference to the past or the future, and determine whether they should participate. In other words, this approach assumes that the household members have already decided whether and how much to work, as well as whether to participate in other assistance programs; these decisions are made independently from the decision to participate in the FSP.

The studies based on this framework examine the association of selected household characteristics with nonparticipation in the FSP. The goal of the analysis is to estimate the separate effect that each characteristic, such as income, has on the probability that the household will participate in the FSP, holding all else constant. In the same way, the studies can identify household characteristics associated with nonparticipation.

This approach is seriously limited in its capability to model the decision realistically because it assumes that households use only a small amount of information, relative to the information examined in the other approaches, in making their decisions. 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 and also that households reach their decisions mindful of relevant information about the past and of their expectations about the future. Thus, to the extent that the assumption of isolated decision-making is faulty, and relevant information on the participation decision is left out of these models, the estimated

effects of different household characteristics on the probability of participation could be biased.

2. The Dynamic FSP-Only Approach

A second approach underlying some multivariate studies extends the first model by looking at household characteristics over a period of time, instead of simply at one time. Like the static model, the dynamic approach does not take into account the interdependence of household decisions; but unlike the static approach, it examines the effects of both household characteristics and changes in those characteristics on the likelihood of participation over a period of time.

The dynamic FSP-only approach can be quite useful in thinking about the changes within households that might induce them to enter or exit the FSP. The literature on the dynamics of AFDC receipt has found, for example, that a change in marital status is one of the strongest predictors of movements into or out of the AFDC program (Bane and Ellwood, 1983; Ellwood, 1986).

Events that might affect the attractiveness of the FSP to a household include marriage, divorce, job beginnings or endings, the death of a spouse, the onset of disability, and changes in the household's participation in other programs; obviously, these might also affect the household's eligibility for the FSP. Although some of the more constant characteristics of a household, such as the educational level of its members, may be important predictors of the household's participation, the dynamic model allows the researcher also to examine changes in characteristics that may lead directly to a change in participation.

In addition, looking at household behavior over time allows estimation of the amount of turnover in the FSP and which household characteristics are associated with higher or lower probabilities of entering or exiting the program. These findings

can be useful in identifying which households turn to the FSP on a temporary basis and which depend on it for long-term assistance.

The studies based on the dynamic approach do not account for any household decision other than whether to participate in the FSP. To do so would be difficult, though not impossible. Consequently, the dynamic model suffers from many of the same methodological limitations as those of the static FSP-only model. More specifically, neither approach incorporates a rigorous theoretical model of decision-making behavior. These models do allow the researcher to say that certain groups are significantly more likely to be FSP participants, or significantly more likely to enter or exit the program, than other groups, but they do not allow the researcher to examine the decision-making process itself.

3. The Static Multiple-Decision Approach

The third model appearing in the literature represents an explicit attempt to model household decision-making behavior. In contrast to the first two approaches discussed here, this approach assumes that households make the decision to participate in the FSP along with other relevant decisions; that is, the model accounts for the interdependence of household decisions. But like the static FSP-only approach, this third approach examines households at only one time; it assumes that households make the decision to participate in the FSP without considering information about the past or expectations about the future.

In this framework, it is assumed that households make choices to maximize *their well-being, given the resources available to them.* The amount of resources available to a household depends partly on the decisions of its members as to the number of hours they will work and their participation in public assistance programs, as well as factors beyond their immediate control, such as the availability

and generosity of assistance programs, the availability of other unearned income, and the rate at which earnings are taxed.

The multiple-decision approach also makes assumptions about how households derive well-being from income and leisure time. Stigma and other costs of participation (such as psychic costs of applying for and using the coupons, costs of transportation to the program office, and time spent applying for benefits) are typically incorporated into the assumptions of the model being estimated. For instance, household members may perceive themselves to be better off with income received from employment than with cash or in-kind benefits received from public assistance programs because of the stigma associated with the latter.

Finally, this last approach also assumes the household has complete knowledge and understanding of the resources available to it, including its eligibility for different assistance programs. In making its decision to participate, a household chooses, from the set of available options, the combination of hours of work and program participation that maximizes its well-being. If an eligible household is not participating in a given program, the model assumes that the household did not include that program in its "best" combination of work and program participation; nonparticipation, therefore, was the household's rational choice.

If these assumptions were true, the observed program participation rate would represent the "optimal" rate from the perspective of the eligible households. In other words, based on the current program structures and the perceived costs of participation, each eligible household has rationally chosen whether or not to participate. Arguably, however, the assumptions are not fully valid, since many households probably are not aware of all the resources available to them. For instance, as noted in section III, several studies have shown that, indeed, many households do not have complete knowledge about their eligibility for the FSP.

Even if the participation decision is optimal from the household's perspective, it may not be optimal from the perspective of society as a whole. For example, if there were less stigma associated with accepting public assistance, or if transportation and other costs of participation were lower, more households would likely choose to participate. Depending on the long-term social consequences of high or low rates of participation in the FSP, it might be beneficial to society to either raise or lower the costs of participation.

The major benefit of the static multiple-decision framework is its recognition that households do not make the FSP participation decision in isolation from other decisions. Unlike the static and dynamic FSP-only approaches, the multiple-decision approach assumes that the decision of whether, and how much, to work is made jointly with the decision to participate in the FSP or any other assistance program for which the household is eligible. Thus, the model takes into account the work incentives and disincentives built into the rules for determining food stamp benefit amounts. For example, benefits are computed as the amount of the household's maximum benefit less 30 percent of its net income. The household's benefit amount therefore will decrease as the household members' earnings increase, reducing their incentive to increase their earnings. This disincentive is mitigated somewhat by the earned income deduction, which allows a portion (currently 20 percent) of earnings to be deducted from gross income in the calculation of a household's net income. Thus, how much household members work has a direct effect on the household's eligibility and benefit amount. Under these conditions, it is likely that labor force and program participation decisions are made in conjunction with one another. In fact, as discussed in section III, Fraker and Moffitt (1988) found a significant relationship between the labor supply and FSP participation equations in their model.

Another benefit of this approach is that household decisions to participate in other public assistance programs can also be examined simultaneously with the FSP participation decision. This is a significant advantage since participation in multiple programs is very common among FSP participants (Long, 1988; Weinberg, 1985, 1986; Falk and Richardson, 1985; MacDonald, 1983). Long found, for example, that 95 percent of the FSP households studied were also participating in at least one of the 16 other assistance programs examined.⁴

One last advantage of the multiple-decision approach is that it permits estimation of the degree of interdependence among decisions concerning labor force and program participation, as well as the separate effects of different household characteristics on each of these decisions. By accounting for the possible interdependence among household decisions, this type of analysis can provide more precise estimates of the effects that different factors have on the decision whether to

as the assumption of full knowledge of program eligibility, may be unrealistic. Finally, this approach requires very complex econometric modeling and can therefore be difficult to implement.

B. DATA LIMITATIONS

The existing literature on the determinants of FSP participation has relied almost exclusively on large, nationally representative surveys of households, such as the Panel Study of Income Dynamics (PSID) and the 1979 Income Survey Development Program Research Test Panel (ISDP).⁵ FSP participants can be identified if the survey data set includes an indicator for whether the household reported receiving food stamps. Nonetheless, underreporting of food stamp receipt is a pervasive problem in national household surveys. Identifying eligible nonparticipants poses an even greater challenge, since the researcher must infer eligibility based on survey data that only partially match program eligibility criteria, and that are subject to reporting and measurement error. Finally, the surveys tend to be limited in the type of information they provide on factors that may influence the participation decision. The following subsections describe these limitations in more detail.

1. Determining the Eligibility of Nonparticipants

To determine what factors are associated with participation or nonparticipation, one must be able to compare households participating in the FSP with households eligible for, but not participating in, the program. As discussed above, the participation status of households can be observed directly if the survey

⁵This paper does not review the few studies that are based on smaller, nonrepresentative samples except in the section that reviews direct survey evidence on why eligible households do not participate.

asked respondents whether their household received FSP benefits; however, we cannot directly observe the eligibility status of nonparticipants. To estimate their eligibility, researchers must apply the criteria used in actual FSP eligibility determinations to detailed information collected during the survey on the income, assets, expenses, and size of the respondent's household.

Unfortunately, no survey data set has all of the information needed for this estimation. Many data sources provide a portion of the necessary information, and the researchers using these sources must decide how to estimate eligibility based on the information provided. Needless to say, different authors have made different decisions about the best way to accomplish those approximations. Because of the variations in data sources and in the techniques used to adjust for missing information, the findings on FSP participation are not strictly comparable across studies.

Furthermore, estimating eligibility status is rendered more imprecise by incomplete or inaccurate data due in large part to reporting or measurement error. For instance, as will be discussed in section III, estimated participation rates tend to be quite low for households that reportedly had no income. This finding may reflect the misclassification of these households rather than a characteristic associated with participation behavior, since very few households have no income of any kind, and, intuitively, those with no income ought to participate at higher than average rates. If many of these households actually did have incomes, the amounts were unknown to the researcher, and therefore, estimates of the households' eligibility status were likely biased. In other words, households that appeared to have no

income and were not participating in the FSP might actually have income and, consequently, might not have been eligible for the program.⁶

It should be noted that the misclassification of households by eligibility status could bias survey results regarding reasons why eligible households do not participate in the FSP. Some national surveys (such as the Panel Study of Income Dynamics) ask nonparticipants their reasons for not participating in the FSP. The researcher using data from these surveys must estimate the eligibility of the nonparticipants, and identify the subset who are eligible for the program, before categorizing the responses by eligible nonparticipants. Since ineligible nonparticipants would be the respondents most likely to state that they are not participating in the program because they do not think they are eligible for it, the percentage of "eligible" nonparticipating households that give this reason could easily be biased by faulty estimation of eligibility.

2. The Underreporting of Participation in Household Surveys

Household surveys have been shown to considerably underreport FSP participation. For example, in the March 1986 Current Population Survey (CPS), only about 67 percent of the households that had received food stamps during 1985 accurately reported that receipt (U.S. Department of Commerce, 1987). This underreporting can bias an analysis of participation in two ways. First, participation rates obtained from these data sets will obviously be underestimated if only a portion of the FSP participants reported their participation, and, second, estimates of

⁶The Census Bureau is currently undertaking a study that compares the household data in SIPP with data from administrative records. This study will likely provide information on whether accuracy in reporting food stamp receipt varies by household characteristics.

the factors associated with participation or nonparticipation may be distorted if certain groups of participants are less likely than others to report their participation.

If the subset of participants who misreport their participation status is a random sample of all participants, the analysis of the factors associated with nonparticipation in the FSP would not be affected. But if certain groups of people are more likely than others to misreport their participation, any conclusions regarding the factors that significantly affect the participation decision could be misleading. Suppose, for example, that among all actual participants, those with relatively more education are less likely to report receiving food stamps. The researcher will not be able to distinguish between those who do not report their participation and eligible nonparticipants. In this case, the researcher would disproportionately group the more educated participants with the nonparticipants, which could bias the estimated effect of education on participation.

3. Limitations in the Type of Information Available in Household Surveys

When examining why an eligible household does not participate in the FSP, one would like to know what information about the program is available to the household, how participation in the FSP is regarded in the household's community, the distances to and hours of operation of the nearest program office, how the household defines need, and so on. The answers to these, and similar, questions could help identify why eligible households do not participate in the program and could also indicate program changes that might influence the participation behavior of eligible nonparticipants. For example, if a large majority of eligible nonparticipants stated that their community "looked down on" food stamp recipients, program officials could target their efforts in outreach and education to the

community as a whole and to potentially eligible nonparticipants to overcome such perceptions.

In general, however, nationally representative household surveys do not ask the kinds of questions listed above. The information collected in these surveys tends to be further removed from the participation decision. Typically, the survey data underlying the findings reported in this review offer relevant information only on such factors as the respondent's gender, race, employment status, age, and marital status and the household's income, program participation, and size. The studies using these surveys may be able to conclude, for instance, that the employed are less likely than the unemployed to participate in the FSP, but they cannot cite the direct cause of their nonparticipation, such as not being able to reach the program office during work hours.

This limitation of national household surveys is important to remember when reading the literature on participation in the FSP. Several of the variables included in these studies (age and race, for example) are likely to serve as proxies for the real reasons households do not participate, since information on these reasons is not available. As a result, the findings of these studies are not as easily translated into prescriptions for program changes as they might be if responses to more detailed and probing questions regarding nonparticipation were available.

C. IMPLICATIONS OF THE RESEARCH DATA AND DESIGNS

Participation in the FSP is a challenging area of research because of the methodological and data limitations involved, as the preceding discussion has illustrated. FSP participation behavior is difficult to model, and accurate estimation of the determinants of participation is thwarted by the type and the quality of the information available. Most of the studies reviewed in the next section have

substantial flaws in their theoretical approach or in the data underlying the analysis, or both. In addition, many of their findings are likely to be out of date, since they are based on data from the period before implementation of the Food Stamp Act of 1977 (P.L. 95-113). These limitations are important to keep in mind in reading the following discussion of specific studies. They also point to specific needs for further research, the subject of the last section of this report.

Despite these limitations, the existing literature does help delineate the discussion of nonparticipation by providing a consistent set of findings on the reasons survey respondents state for their nonparticipation, the household characteristics associated with variations in participation rates among eligible households, and more limited information on the effects of program design parameters on participation. In other words, taken together, the findings deserve some measure of confidence because they are generally consistent across studies, and especially because they show consistency across different approaches and data sets.

III. A REVIEW OF THE LITERATURE

It is well documented that a significant minority of the households eligible for the Food Stamp Program do not participate in it. This section of the paper summarizes the extensive research investigating the causes of FSP nonparticipation and the household characteristics associated with nonparticipation. Studies examining direct survey evidence on why eligible households choose not to participate are discussed in section A. These studies examine the results of surveys in which potentially eligible households were asked to describe their reasons for nonparticipation. Section B concentrates on studies that investigated how participation rates vary by household characteristics, and section C reviews the studies employing multivariate analysis to distinguish the various characteristics, factors, and other household decisions that influence the decision to participate in the FSP.

We emphasize again that although several household characteristics have been found to correlate significantly with FSP participation status, only some of these are likely to exert true influence on the participation decision or to determine participation status in some way. For example, a household's income may reflect the household's need for food stamps and would therefore have a direct effect on the participation decision. In contrast, other characteristics may be associated with participation status primarily because they are associated with unobservable factors that do, in fact, influence the participation decision. For example, elderly persons may associate more stigma with the FSP than other populations, but since stigma cannot usually be measured directly by the researcher, it would be unclear whether lower participation among the elderly would be due to stigma or to age.

Before reviewing the research evidence, we must also note that the results of the studies discussed here may vary depending on whether the data were collected before or after the elimination of the purchase requirement (EPR) and other provisions of the Food Stamp Act of 1977 went into effect. The purchase requirement was eliminated, for the most part, in December 1978, and the other provisions of the Act were phased in during 1979. If participation behavior changed because of the EPR, as many believe it did, or because of other provisions of the Act, the results based on the earlier data sets may not be directly comparable to those based on the later ones, or to the FSP in its present form. More generally, changes in the design of the FSP over time make comparisons over time difficult.

A. DIRECT SURVEY EVIDENCE ON REASONS FOR NONPARTICIPATION

This section reviews five studies that have examined survey respondents' answers to items asking their reasons for not participating in the FSP. Table 1 outlines the findings of these studies, which are summarized at the end of this section.

Coe (1983b). In the 1979 Panel Study of Income Dynamics (PSID), respondents not participating in the FSP were asked the major reasons why they were not doing so. Using these data, Coe (1983b)⁷ found that the most common reason reported for nonparticipation among those households he estimated to be eligible for the program was ignorance about their eligibility; over half of these respondents gave this reason. Other reasons cited were lack of need, administrative hassles, having been declared ineligible by a welfare worker, and physical access

⁷Coe (1983b), the study reviewed here, and Coe (1983a) report similar findings with respect to participation in the FSP. Since the findings in the two papers are essentially the same, and Coe (1983b) presents participation rates by demographic characteristics, only Coe (1983b) is included in this review.

problems, although none of these reasons was given by more than 9 percent of the eligible nonparticipants. Fewer than 1 percent of them said they did not participate because the value of the benefit was too low.

Coe also examined reasons for nonparticipation among several demographic groups of households represented in the PSID. He found that the respondents most likely to believe their households were not eligible for food stamps were those from households headed by an unmarried elderly person, by an employed person, or by a person with a relatively high level of education. Adverse personal attitudes about participation were most often reported by respondents from households headed by a middle-aged or elderly man and by those from households headed by a relatively well-educated person. Respondents from households headed by a young married couple were less likely to cite administrative hassles than those from households headed by middle-aged married couples, and residents of small towns were less likely to cite those hassles than residents of big cities. Finally, respondents whose households were already receiving another form of public assistance perceived fewer hassles with the FSP, were better informed about it, and had less adverse attitudes about participating in it than other eligible respondents.

U.S. GAO (1988b). A portion of Coe's analysis was updated by the U.S. General Accounting Office (U.S. GAO), using data from the 1986 PSID. This later wave of the survey asked the same nonparticipation questions as those asked in 1979. U.S. GAO's research, also based on estimates of the respondents' eligibility, found that approximately 51 percent of the households classified as eligible nonparticipants in 1986 did not think they were eligible for the FSP. This was by far the most common response, which mirrors Coe's earlier findings. Administrative hassles and lack of need for the benefits were cited by 12 percent or fewer of the

TABLE 1

The Percentage Distribution of Responses of FSP-Eligible Households to Questions on Their Nonparticipation, from Five Studies Using Direct Survey Evidence on Reasons for Nonparticipation

Respondent's Stated Reason for Household's Nonparticipation ^a	Study, Data Source, and Year(s) Data Collected				
	Coe (1983b) 1979 PSID ^b	U.S. GAO ^c (1988b) 1986 PSID ^b	Blaylock and Smallwood (1984) 1979-1980 SFC-LI ^d	Blanchard et al. (1982) 1980-1981 SSI/Elderly Cashout Demonstration	Ohls et al. (1985) 1983-1985 Simplified Application Demonstration
Information Problems:			38%		
Did not think it was eligible	54%	51%	--	25%	--
Did not know about program, did not know how to apply	1	2	--	2	9%
Did Not Need the Stamps	9	14	27 ^e	37	15
Costs Associated with Participation					
Too High:			11		
Stamps cost too much	--	--	--	1	--
Too much time or trouble	--	--	--	--	6 ^f
Stores don't accept stamps	--	--	--	--	--
"Administrative Hassles"	8	12	--	--	--
Physical Access Problems	6	2	--	3	22
Benefit Amount Too Low, "Not Worth It," "Not Worth the Trouble"	1	1	--	21	37
Personal Attitude About Program:					
Don't like the idea of the program	5	7	--	--	--
Embarrassed or too proud	--	--	14	--	--
Applied, But Was Turned Down	--	--	--	14	7
Applied, But Was Turned Down	7	6	10	--	--
Number of Households Sampled	424	-- ^g	1,350 ^h	482	110

Notes: Reasons for nonparticipation were asked of nonparticipating households in Coe and U.S. GAO; eligible nonparticipating households in Blaylock and Smallwood; eligible nonparticipating households that had never applied for food stamp in Blanchard et al.; and eligible nonparticipating households that believed they were eligible, but had never applied for food stamps, in Ohls et al. The percentages are therefore not directly comparable across studies. Blanchard et al. and Ohls et al. allowed multiple responses to individual questions. Except for Blaylock and Smallwood, not all of the reasons given by respondents in these studies appear in this table.

Table 1 (continued)

^aThe reasons listed below were taken directly from the responses presented in the studies examined. They have been grouped together based on the content of the response.

^bPanel Study of Income Dynamics.

^cThe figures reported in Appendix III of the U.S. GAO report are presented here as percentages of the eligible nonparticipants sampled.

^dSurvey of Food Consumption in Low-Income Households

^eRespondents said they believed that, relative to other households, theirs did not need the stamps.

^fRespondents stated that they did not have the time to apply.

^gThe number of respondents was not reported in the paper.

^hThis is an approximate sample size, as the exact number of respondents was not presented in the paper.

eligible nonparticipants.⁸ Other reasons for nonparticipation, cited by fewer than 7 percent of the eligible nonparticipants, included attitudinal factors (such as embarrassment about using food stamps or distaste for being on welfare), being declared ineligible by a welfare worker, problems of physical access, and lack of knowledge of how to apply. Fewer than 1 percent stated that it was "not worth it" to apply.

A comparison between the responses to the nonparticipation questions in the 1979 PSID and those to the questions in the 1986 PSID shows little change in the distribution of responses. One of the few substantive differences between the responses given in the two years was that in 1986 more eligible nonparticipants gave lack of need as the main reason for their not participating in the FSP.

Blaylock and Smallwood (1984). Blaylock and Smallwood used the 1979-1980 Survey of Food Consumption in Low-Income Households (SFC-LI), a nationally representative survey of low-income households, to identify which household characteristics were associated with four specific reasons why apparently eligible households did not participate in the FSP: lack of information about the program, believing that others needed the assistance more, believing that the costs associated with participating were too high, and distaste for a government food stamp program.

Among the nonparticipant households estimated to be eligible for the FSP, 38 percent cited lack of information; 27 percent, lack of need relative to others; 11 percent, high costs; and 14 percent, distaste for such a program. Ten percent of the eligible nonparticipating households stated that they had applied for food stamps but their application had been denied. For the rest of the analysis, Blaylock and Smallwood considered these last households as ineligible for the FSP.

⁸The figures reported in Appendix III of the U.S. GAO report are presented here as percentages of eligible nonparticipants.

The authors found that the respondents' answers could be differentiated based on several selected household characteristics. Lack of information was apt to be cited by respondents from larger households, households that owned their home, or households headed by an employed person or a high school graduate. Respondents from households headed by an elderly person, households with a nonblack head, and larger households were more likely than others to cite high costs as a deterrent to participation, while those from households headed by a high school graduate and low-income households were much less likely than others to report that they did not like the idea of a food stamp program.

Blanchard et al. (1982). This report presents the results of an evaluation of the Food Stamp SSI/Elderly Cashout Demonstration, a field experiment conducted by the Food and Nutrition Service of the U.S. Department of Agriculture (USDA) in the early 1980s. Although the study did not use a nationally representative sample of all eligible nonparticipants, we include it in this review because it was designed in part to examine the reasons for nonparticipation among elderly persons eligible for the FSP--a group that has lower participation rates than most other demographic groups (see for example, Doyle and Beebout, 1988).

The demonstration provided food assistance in the form of cash benefits, instead of food coupons, at demonstration sites in eight states and monitored similar sites for comparison purposes. The project targeted households whose members were 65 years old or more or were recipients of Supplemental Security Income (SSI) or both. As part of the evaluation, FSP-eligible nonparticipants who had never applied for food stamps were asked directly their reasons for nonparticipation.

Unlike the PSID results reviewed above, the responses given by the respondents to this survey fell into no clear majority. Among the respondents, 37 percent said they did not need the benefits, 25 percent believed they were ineligible,

and 21 percent stated that the benefit did not seem worth the trouble. Another 14 percent said they were either too proud or too embarrassed to participate, while only 3 percent cited problems in getting to the program office as a reason for their nonparticipation.

Ohls et al. (1985). This study evaluated the Simplified Application Demonstration, which streamlined the process of applying for food stamps at several demonstration sites. The simplifications were primarily aimed at applications by those eligibles receiving other forms of welfare, particularly AFDC. The evaluation was based in part on interviews with AFDC recipients who were not currently participating in the FSP, although it should be noted that FSP participation rates among AFDC recipients were quite high at all of the demonstration sites, the lowest rate being about 75 percent.

Interviewees who believed their households were eligible for the FSP, but who had not applied for food stamps, were asked their reasons for not doing so. The most commonly cited reasons were difficulty in getting to the food stamp office, lack of need for the benefits, and the opinion that the benefits were not worth the trouble to obtain. Reasons related to stigma, such as pride or embarrassment, were cited by only a small percentage of the respondents, which is not surprising since their households were already receiving another form of public assistance, AFDC. Although the sample of interviewees was quite small and was not nationally representative, we include the study in this review because it raises the puzzling question of why eligible households already receiving some form of public assistance do not participate in the FSP.

Summary. The studies reviewed here indicate that the most consistent reason given for not participating in the FSP is lack of knowledge about the household's eligibility. The survey respondents also often cited lack of need for food assistance.

The distribution of reasons given by eligible nonparticipants for their nonparticipation is very sensitive, however, to the estimation of eligibility status. As stated in section II, eligibility status is difficult to measure, particularly with surveys such as the PSID and the SFC-LI, which collect a limited subset of the information needed to measure eligibility. As a result, the classification of households by eligibility status is prone to error.

The percentage of "eligible" nonparticipants who responded that they were not aware of their household's eligibility is especially susceptible to error, as is the percentage who responded that they had applied for food stamps but were turned down. It is very likely that some of the apparently eligible households in which the respondent cited either of these reasons were, in fact, not eligible for the program. Thus, although studies based on the responses of nonparticipating households can be enlightening, their results offer only limited insight into the reasons for nonparticipation because of the sensitivity of the distribution of responses to the difficult procedure of estimating FSP eligibility.

B. ANALYSES OF PARTICIPANT AND NONPARTICIPANT CHARACTERISTICS

Comparing the rates of FSP participation among different subgroups of the eligible population can provide insight into the household characteristics that are associated with different levels of participation. This section reviews the tabular results of five studies that have investigated these rates: Czajka, 1981; Coe, 1983b; Doyle and Beebout, 1988; Brown, 1988; and Ross, 1988.

Before discussing the results of these papers, we should reemphasize that several limitations in the available data make accurate estimates of the FSP participation rate very difficult to obtain. As noted earlier, if the number of participants (the numerator of the participation rate) is estimated based on survey

respondents' reports of their household's participation in the FSP, as it is in the papers by Coe, Czajka, Brown, and Ross, the participation rate calculated is almost certain to be underestimated since respondents are known to underreport

participation. Second, it is even more difficult to estimate the number of eligible households (the denominator of the rate) because of incomplete and possibly inaccurate information on survey households' income, assets, and deductible expenses--the factors examined in actual determinations of FSP eligibility.

The five papers examined here not only made different assumptions and used different approaches in approximating eligibility, they also used diverse surveys (including SIPP, the PSID, and the Consumer Expenditure Survey) conducted in different years. As a result, the calculations of levels of participation may not be equally accurate estimates, nor are the results across the studies directly comparable.

Nonetheless, the rates for different subgroups within each study can be compared; and, as shown in Table 2, these within-study comparisons offer some consistent conclusions. Households participating in the FSP at higher-than-average rates were those eligible for larger benefits, those containing children (especially young children), those headed by a single woman, and those participating in other public assistance programs (particularly AFDC and SSI). Nonwhite households had higher FSP participation rates than white households, and large households tended to participate more than small households. Participation rates were lower than average among households headed by an elderly person, those headed by a relatively more educated person, and those with earnings.

As might be expected, households with higher incomes participated in the FSP at lower rates than households with low incomes. The participation rates among households with no income were, however, surprisingly low. This finding was particularly salient in Czajka's analysis. Czajka presented participation rates by the

household's income minus any welfare payments and by its total cash income including welfare. Households with zero nonwelfare income participated at a rate of about 47 percent, whereas those reporting a total cash income of zero participated at a rate of only about 5 percent. This anomaly is likely due to underreporting by the households and, hence, misclassification of their income, since very few households truly have no cash income of any kind. It is unknown in which income category these households actually should have been; moreover, some might not have been eligible for the FSP if they had been correctly classified.

Results from descriptive analyses, such as those presented here, are useful in identifying differences in participation rates among groups of eligible households, but conclusions about the source of the differences based only on these results could be misleading. The results do not distinguish among the independent effects of different socioeconomic characteristics on the probability of participation. For example, a table showing that the participation rate is lower for households in which the head has a high school diploma than it is among other eligible households could lead one to assert that education reduces the probability of participation. Yet a higher level of education may be strongly correlated with higher earnings, and earnings, not education, may be the driving force behind the negative effect.

C. MULTIVARIATE ANALYSES

Unlike tabular analysis, multivariate analysis permits estimation of the independent effects of many different factors on the probability of a household's participating in the FSP. In this way, one can determine whether a certain characteristic, such as education of the household head, has a significant effect on the probability of participation when all else is held constant. As noted in section II, researchers have employed a variety of different approaches in modeling the

TABLE 2

Estimated Rates of Household Participation, by Selected Household Characteristics, from Five Studies Using Tabular Analysis

Characteristic	Czajka ^a (1981)	Coe (1983b)	Doyle and Beebout (1988)	Brown ^b (1988)	Ross ^c (1988)	
					(1)	(2)
All Households	30.4%	46.1%	60.0%	28.0%	41.0%	58.0%
Benefit Amount:						
Less than \$50	23.2	37.7	34.7	--	30.0	32.3
\$50 - 100	28.7	54.2	61.6	--	31.0	58.0
\$100 - 150	45.1	73.8	94.1	--	66.0 ^d	91.0 ^d
Greater than \$150	50.3	75.0	87.8	--	--	--
Monthly Gross Income						
\$0 - 499	--	46.9	--	--	--	--
\$500 - 999	--	42.2	--	--	--	--
\$1,000 or more	--	21.1	--	--	--	--
Monthly Gross Income as a Percentage of the Poverty Threshold:						
Zero	4.6	--	61.9	--	--	--
1 - 50%	42.7	--	93.6	--	62.0	86.0
50 - 100%	42.2	--	68.1	--	48.5	68.9
100 - 125%	14.8	--	15.6 ^e	--	20.0 ^f	19.0 ^f
125% or more	5.3	--	34.2 ^g	--	--	--
Household Receives Earned Income:						
Does receive	23.3	24.8 ^h	37.4	43.0	--	--
Does not receive	34.7	50.6	--	19.0	--	--
Household Receives Other Welfare Assistance:						
Does receive	64.6	--	--	--	--	--
AFDC	--	85.3	134.6 ⁱ	--	--	--
SSI	--	59.1	67.0	--	--	--
Does not receive	14.0	20.0	--	--	--	--
Race: ^j						
White	23.6	40.4	--	22.0	--	--
Nonwhite	46.8	56.7	--	42.5	--	--
Head of Household: ^k						
Husband-wife heads	26.3	41.7	--	16.0	--	--
Single female head	38.0	51.6	--	--	--	--
Single male head	15.7	23.3	--	--	--	--
Elderly Head of Household	25.0 ^l	35.5 ^m	39.3 ⁿ	21.4 ^o	34.0 ⁿ	44.0 ⁿ
Education of Household Head or Reference Person:						
Less than 6 grades	48.4	54.4	--	--	--	--
Grades 6 - 8	31.2	44.8	--	35.2 ^p	--	--
Grades 9 -11	37.9	50.0	--	35.0	--	--
12 grades	20.6	39.7	--	28.0	--	--
More than 12 grades	18.3	38.9	--	12.0	--	--
Household Size:						
1	--	--	47.3	--	--	--
2	--	--	58.0	--	--	--
3-5	--	--	73.0	--	--	--
6 or more persons	--	--	81.2	--	--	--
Households with Children Present ^q						
Children present	46.5	62.0	76.8	--	59.0	81.0
No children present	20.8	35.3	--	--	--	--
Number of Children in Household ^r						
None	20.8	35.3	--	--	--	--
1	36.2	55.9	--	--	--	--
2-3	43.7	67.6	--	--	--	--
4 or more	72.5	62.1	--	--	--	--

Table 2 (continued)

NOTES: The participation rates reported in the papers by Coe, Czajka, and Brown were obtained from a household survey, as are one of the sets of participation rates reported in Ross's paper (these rates appear above in column 1). Coe used the 1979 Panel Study of Income Dynamics, Czajka used the 1979 Income Survey Development Program Research Test Panel, Brown used the 1984-1985 Consumer Expenditure Survey, and Ross used August 1984 SIPP data. The other set of participation rates reported in Ross (presented above in column 2) were calculated using the August 1984 Food Stamp Quality Control sample to estimate the number of participating households, and August 1984 SIPP data to estimate the number of eligible households. Doyle and Beebout estimated participation rates using 1984 administrative data to obtain the number of participants, and the expanded Wave 4 analysis file of the SIPP 1984 panel to estimate the number of eligible households.

The participation rates presented in this table are weighted averages of the rates reported in the papers that fell into each category. For example, the participation rate reported in Doyle and Beebout for households of three to five persons is an average of the participation rates for three-person households, four-person households, and five-person households, weighted by the number of FSP-eligible three-, four-, and five-person households.

^aCzajka estimated participation rates for each of three months. The rates presented here are averages of the three months.

^bThe participation rates in Brown's paper are for eligible consumer units, not eligible households. Thus, the unit of measurement is similar, but not identical, to that used in the other papers.

^cRoss presented two sets of participation rates. The rates in column 1 were estimated using only August 1984 SIPP data, whereas the rates in column 2 were estimated using August 1984 SIPP data and data from the 1984 Food Stamp Quality Control sample and are therefore directly comparable to the rates estimated by Doyle and Beebout.

^dThe participation rate is for households eligible for an FSP benefit of 100 dollars or more.

^eThe income-to-poverty threshold ratio is between 101 percent and 130 percent.

^fThe income-to-poverty threshold ratio is 100 percent or more.

^gThe income-to-poverty threshold ratio is 131 percent or more.

^hThe participation rates in Coe's paper distinguish between households headed by a person employed 1,500 hours or more annually and those whose head was employed fewer than 1,500 hours.

ⁱDoyle and Beebout assert that this anomalous finding is due to the underreporting in SIPP of AFDC receipt, as well as the underrepresentation in SIPP of low-income female-headed households with children.

^jCoe grouped households by "white" and "nonwhite," whereas Czajka used "black" and "white, other" to classify households by race. Coe's categories are used here, and so the rates from Czajka's paper are for similar, but not identical, categories. Brown calculated participation rates for three categories: white, black, and other; the categories "black" and "other" have been combined above for comparison to the other papers.

^kCoe combined the age, gender, and marital status variables into a composite variable. The participation rates presented here are for married couples, unmarried women, and unmarried men. These rates are the averages of different age groups (young, middle-aged, and elderly) within each category.

^lThe age of the reference person was 60 or older.

^mThe participation rate is the average of rates for households headed by an elderly (60 years or older) married couple, an elderly unmarried woman, or an elderly unmarried man.

ⁿThe participation rate is for households that contained an elderly member (60 years or older).

^oThe age of the reference person was 65 or older.

^pThe participation rate is for consumer units in which the reference person had 8 years of education or less.

^qThe participation rate in Czajka's paper reflects the presence of children under age 16; in Coe's, children 17 and under; and in Doyle and Beebout's and Ross's, children under 18.

^rThe participation rate in Czajka's paper reflects the number of children under age 16, and the rate in Coe's paper reflects the number of children 17 and under.

participation decision, and the specific approach used can greatly affect the results obtained from the analysis. In the review of multivariate studies that follows, we group the studies according to the three main approaches found in the literature: the static FSP-only approach, the dynamic FSP-only approach, and the static multiple-decision approach. Section IV summarizes the results and limitations of these three sets of analyses.

1. Studies Based on the Static FSP-Only Approach

Most of the studies in this set fall into two discrete categories: those examining the determinants of FSP participation (MacDonald, 1977; Czajka, 1981; Johnson, Chen, and Burt, 1982; Coe, 1983b); and those examining the effect of participation in the FSP on food expenditures (Chen and Johnson, 1982; Chen, 1983; Smallwood and Blaylock, 1985; Devaney and Fraker, 1987).⁹ Although the studies in the latter group did not have as their primary objective the estimation of a participation equation, each study included a participation equation in its model of food expenditures to control for possible unobserved differences between FSP participants and nonparticipants in factors that could affect expenditures on food.

In addition, although the focus of these two groups of studies differed, as did the authors' methodologies, the studies used the same basic approach in estimating a participation equation, and their results were fairly similar. We therefore discuss their findings together as follows, and as summarized in Table 3.

⁹Several papers that also estimated a FSP participation equation but did not meet our criteria for inclusion in this review include: studies using data that were not nationally representative (Ranney and Kushman, 1987; Lane, Kushman, and Ranney, 1983; Kim, 1983; Phillips, 1982; Blanchard et al., 1982; Bick, 1981); studies examining participation among only a subset of the eligible population (Akin, Guilkey, and Popkin, 1985; Blanchard et al., 1982; Coe, 1977); and one study (Johnson, Burt, and Morgan, 1981) that was based on only a very parsimonious specification of the participation equation.

Household Characteristics. Together, the studies consistently identified several household characteristics that were associated with the probability of participation in the FSP. First, as one might expect, the higher the household income, the lower the rate of FSP participation. Second, those households headed by a single man, an unemployed person, an elderly person, or a relatively well-educated person had lower participation rates than other households, as did households that owned their homes. On the other hand, households that participated in other welfare programs, households headed solely by a woman (as opposed to those headed by a man and a woman), households located in the Northeast, and nonwhite households were significantly more likely to be FSP participants than other households.

The Benefit Amount. One would think that a household entitled to a large food stamp benefit would be more likely to participate in the FSP than a household entitled to only a small benefit. More specifically, there are monetary costs involved in going to the program office to apply for benefits, and there may be nonmonetary, personal costs, such as embarrassment, in using food stamps. These costs are likely to be fixed costs, which would not vary with the size of the benefit. It therefore seems plausible that as the size of the benefit rises, the probability of participation will also rise. Doyle and Beebout (1988) did find, as noted above, that participation rates rose as the size of the expected benefit rose, although this relationship was not strictly increasing. But support for the relationship between the benefit amount and participation in the FSP is not consistent across the studies summarized in Table 3. Overall, the estimated relationship tended to be positive--that is, households eligible for larger benefits were more likely to participate--but it was not always statistically significant.

The benefit that a household is eligible to receive is available in survey data only for households that are participating in the program. As a result, the

TABLE 3

The Direction and Significance of the Estimated Effects of the FSP Benefit Amount and Selected Household Characteristics on the Probability of Participation in the FSP, from Eight Multivariate Analyses Based on the Static FSP-Only Approach

	Study, Data Source, and Year(s) Data Collected							
	MacDonald (1977)	Czajka ^b (1981)	Johnson, Chen, and Burt ^d (1982)	Coe (1983b)	Chen and Johnson ^f (1982)	Chen (1983)	Smallwood and Blaylock (1985)	Devaney and Fraker (1987)
	1972 PSID ^a	1979 ISDP ^c	1977-1978 ^e NFCS-LI	1979 PSID ^a NFCS-LI	1977-1978 ^e NFCS-LI	1977-1978 ^e NFCS-LI	1977-1978 ^e NFCS-LI	1977-1978 ^e NFCS-LI
FSP Benefit Amount	+ #	+	+ #	- #	g	+ ^h #	+ ⁱ	+ #
Household Income	j	+ ^k	- #	- #	+ ^g	- #	l	- #
Education of Household Head	- ^m #	- #	- #	- #	- #	- ⁿ #	- #	- #
Race Is Black/Nonwhite		+ #	+ #	+	+ #	+	+ #	+ #
Female Head of Household Only		+ #	+ #	- ^o	+ #	+ #	+ #	+ ^p #
Male Head of Household Only		-	- #	- ^o #	-	- #		-
Head of Household Employed	- ^q #	- ^r	- #	- #	- #	- #	- #	- #
Household Receives Other Welfare Assistance	+ #	+ #	+ #	+ #	+ #	+ #		
Household Head Is Elderly	- #	- #	- #	o	- #	- #	-	- #
Household Owns Home			- #		- #	- #	- #	- #
Household Located in Northeast	- #		+ #		+ #	+ #	+ #	+ ^s #

NOTES: A "+" signifies this variable was estimated to have a positive effect on the probability of participation in the FSP, while a "-" signifies that the estimated effect was negative. A "#" signifies the estimated effect was significant at or below the .10 level. The variables included in this table are a subset of all of the variables that were included in these studies.

^aPanel Study of Income Dynamics.

^bSeparate equations were estimated using two models for each of three months. One model (Model 1) included welfare income as an explanatory variable, while the other model (Model 2) did not. The sign and significance refer to the findings in the majority of the equations using Model 2.

^cIncome Survey Development Program Research Test Panel.

^dResults presented are for the LGT4 model, which the authors found to dominate the other models estimated.

Table 3 (continued)

^aLow-Income Supplement to the Nationwide Food Consumption Survey.

^bResults presented are for the logit-recursive model, which the authors found to dominate the other models estimated.

^cChen and Johnson included the FSP benefit amount in the measure of household income. Thus, the separate effect of the benefit cannot be determined, and this measure of household income may not be comparable to the measures used in the other studies. The authors did include a measure of the maximum food stamp allotment and found that it had a significant positive effect on the probability of participation.

^dChen included the FSP maximum allotment, not the FSP benefit amount.

^eWe obtained the sign of the food stamp benefit effect from the derived reduced form of Smallwood and Blaylock's participation equation. No level of significance is available.

^fMacDonald did not include household income to the study but did include a four-year (1968-1971) sum of the household's decile position in the size distribution of a family income-needs ratio.

^gThe household income measure used in this paper was household income divided by the value of the household's poverty threshold.

^hHousehold income was included in Smallwood and Blaylock's structural model, but a reduced-form estimate of the effect of this variable on participation is not available.

ⁱThe effect of an education of 9 to 11 years on the probability of participation was not significant.

^jThe coefficient on the indicator for high school education was not significant, but the coefficient on the indicator for college education was significant.

^kCoe combined the age, gender, and marital status variables into a composite variable. He found that households headed by unmarried women were less likely to participate in the FSP than married couples, aged 30 to 39 years, and this effect was significant for women 60 or older. Households headed by men 30 or older were significantly less likely to participate than those other two groups.

^lThis effect was not significant when the equation estimated was unweighted.

^mThis indicator is for whether the household head was in the labor force and does not differentiate between employed and unemployed.

ⁿThe indicator equals 1 if the household received any employment income.

^oThe category is Northeast and Central.

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researcher must estimate both the eligibility status of nonparticipants and the size of the benefit to which they would be entitled if they did participate in the program. These estimations are often difficult to construct, and their expected accuracy depends on the income, asset, and expense information in the data set being used. The estimation procedures followed in the multivariate analyses differed, as did the precision of their estimates of the benefit amounts for which the nonparticipating households were potentially eligible. These differences may have been responsible for some of the diversity in the results reported in the studies.

The differences among the studies in the statistical significance of the effect found for the benefit amount may also be due to the different combinations of the other explanatory variables included in the participation equations. For instance, the benefit amount for which a household is eligible depends on the household's size; thus, if the equation included a measure of household size, the direction or significance (or both) of the estimated effect of the benefit amount on the probability of participation could be affected. Coe (1983b) and Czajka (1981) included the number of children in the household as an explanatory variable; and Johnson, Chen, and Burt (1982) included household size as a proxy for the household's benefit amount in one of the equations they estimated. Coe found that when he did not include the household's number of children in the participation equation, the benefit amount was estimated to have a significant positive effect on the probability of participation; but when he did include this variable, the benefit amount was estimated to have a significant negative effect.

As mentioned above, the food stamp benefit amount must be estimated for households that do not participate in the FSP, and there was substantial variation in the estimation procedures used in these studies. The most convincing study with regard to the effect of the benefit amount on the probability of participation was

the one by Johnson, Chen, and Burt. The authors estimated four equations, each with a different measure for the benefit amount: the household's maximum food stamp benefit; household size; and two estimates of the potential benefit amount, which were obtained by different estimation procedures. In all four equations the effect of the benefit amount on the probability of participation was estimated to be positive and significant.

Limitations. Methodological limitations of the studies based on the static FSP-only model hamper a definitive interpretation of their results. The approach taken in these studies assumes that the explanatory variables included in the estimated equation (such as employment status and participation in other programs) are determined independently from the decision to participate in the FSP. It is probable, however, as section II argued, that households make their decisions regarding employment and participation in other programs in conjunction with the decision to participate in the FSP.

If household members decide how many hours to work at the same time as they decide in which welfare programs to participate, employment status, income, and welfare reciprocity certainly are not determined independently from FSP participation. Thus, in the studies reviewed in this section, the estimated effects of characteristics such as household income on the probability of food stamp participation may be biased. The direction and magnitude of the bias are unknown, though the consistency of these results with those based on the behavioral model discussed in section III.C suggests that the bias introduced is one of the magnitude, not the direction, of the estimated effects.

2. Studies Based on the Dynamic FSP-Only Approach

Several studies have examined food stamp participation over time (Carr, Doyle, and Lubitz, 1984; Coe, 1979, 1985; Carr and Lubitz, 1984; Williams and Ruggles, 1988).¹⁰ These studies varied greatly in both the time interval examined and the methodology used. As a result, their findings are not directly comparable, and we therefore discuss each study separately, with the exception of a brief summary at the end of the discussion.

Carr, Doyle, and Lubitz (1984). Carr, Doyle, and Lubitz used data from the 1979 Income Survey Development Program Research Test Panel (ISDP), a nationally representative sample, to examine turnover in the FSP among various subgroups of the population and to identify household characteristics that were significantly correlated with households' movements into and out of the FSP. Because the ISDP provides monthly information, transitions in participation can be measured each month (the ISDP survey covered a period of 12 to 15 months in 1979-1980).

The authors estimated the ratio of the number of households that participated in the FSP at some time during the year to the number of households that participated in an average month. This ratio was 1.74, implying that about 75 percent more households participated in the program over the course of the year than in an average month. The food stamp exit rate, defined as the ratio of the number of households that left the program in a month to the number of participating households in the previous month, was approximately 7 percent on average. The entry rate, calculated as the ratio of the number of new participating

¹⁰Another study, Kirilin and Merrill (1985), examined the dynamics of food stamp use at one FSP district office in Chicago. Since this analysis was not based on a nationally representative sample, and very little of it analyzed the effect of household characteristics on the probability of entering or exiting the Food Stamp Program, we do not include it in this review.

households in a month to the number of nonparticipating households (eligibles and ineligibles)¹¹ in the previous month, was about 0.5 percent on average. These numbers imply that the probability a participating household would leave the program in a given month was about 7 percent, and the probability that nonparticipating household would begin participating in the program in a given month was about .5 percent.

Carr, Doyle, and Lubitz estimated the separate effects of different household characteristics on the probability of entering or exiting the FSP and found substantial variations in these probabilities across different demographic groups. Households that were nonwhite, that were receiving AFDC, that had no earner present, or that contained children were more likely to begin participating in the FSP in a given month than households without these characteristics. Among participating households, the least likely to leave the program were households that were nonwhite, that were headed by a single adult, that were receiving AFDC, that had no earner present, or that contained an elderly or disabled member.

The authors also analyzed the effects of household characteristics on the probabilities of becoming eligible or ineligible for the Food Stamp Program. These results were generally similar to those obtained for movements into and out of the program, with a few exceptions. Households with an elderly or disabled member, while no more likely than other households to begin participating in the FSP, were significantly more likely to become eligible for the program; and households with no earner present, while significantly more likely than others to begin participating in the program, were not significantly more likely to become eligible for the program.

¹¹Ideally, one would want to know the entry rate for FSP-eligible households, but this number was not presented in the paper.

Coe (1979). To identify determinants of participation in the FSP, Coe compared FSP participation status in 1973 to participation status in 1976 for two groups of households, using data collected in the PSID. The first group of households that Coe examined did not participate in the FSP in 1973; the second group did participate in the FSP in 1973. For both groups, Coe compared their participation status in 1973 to that in 1976, attempting to identify factors which were associated with participants becoming non-participants and vice versa. As noted

participation status, as well as the reasons for nonparticipation given by eligible nonparticipants.

Coe found that the benefit amount for which the household was eligible in 1976, the age and employment status of the household head in 1976, and the household's participation status in other welfare programs in 1976 were all significantly associated with the household's FSP participation status in 1979. Households eligible for relatively low benefit amounts, those having an older or employed head, and those not receiving assistance from any other welfare programs in 1976 were significantly less likely than otherwise comparable households to have participated in both years or to have entered the program by 1979.

Changes in the household's FSP benefit amount, in the employment status of the household head, and in the household's participation in other welfare programs were found to be associated with a change in FSP participation status. If the benefit amount for which the household was eligible rose between 1976 and 1979, or if the household began receiving assistance from another program, the probability that the household was receiving food stamps in 1979 was significantly increased. On the other hand, if the head of the household was not employed in 1976 but had become employed by 1979, the probability that the household was receiving food stamps in 1979 dropped, whether or not the household had received food stamps in 1976.

Coe also tried to determine the reasons behind the results discussed above. For example, why does participation in other welfare programs increase the likelihood that a household will join the FSP, and why does the employment of the household head increase a household's probability of leaving the program? Coe found that respondents from eligible households whose head was employed, when asked why they were not participating in the FSP, were likely to state that they

were unaware that they were eligible for the program. Thus, if the employment status of the household head changed between 1976 and 1979, and the household's FSP participation status changed as well, it appears that the change in employment status affected the participation status, in part, through the household's assumption that it was no longer eligible for the FSP. In a similar fashion, joining another welfare program seemed to affect FSP participation by, among other things, making the household aware that it was eligible for the FSP. It is unclear why a household would be aware of its eligibility for another public assistance program and yet would not be aware of its eligibility for the FSP.

The most common reason for leaving given by households that left the program between 1976 and 1979, regardless of any change in their participation in other programs or in the employment status of the household head, was "administrative problems" (such as perceiving administrative hassles or having applied for food stamps but having been denied). Given the difficulty of correctly estimating households' eligibility status, it could be that some of those households were incorrectly estimated to be eligible for the program in 1979 and were not participating in the FSP that year because they were, in fact, no longer eligible for the program.

Carr and Lubitz (1984). These authors used the ISDP to examine significant "trigger events," events likely to precipitate movements into or out of the FSP. Carr and Lubitz hypothesized that five trigger events were likely to affect a household's participation status: a large change in a household's pretransfer income (defined as a change of more than 50 percent in the ratio of the household's pretransfer income to the poverty level); a change in the number of earners present; a drop in assets that renders the household eligible for the FSP (a large increase in assets was considered less relevant among the population examined); a change in the

receipt of Unemployment Insurance (UI) benefits (that is, the household either began to receive or exhausted its benefits); and changes in household composition, from one head of household to two or from two heads to one. To investigate these potential determinants, the authors documented the number of households that entered or exited the FSP within six months after the occurrence of one of these events.¹²

In this descriptive analysis, Carr and Lubitz found that large changes in pretransfer income and in the number of earners present were the most relevant and significant trigger events for both entering and exiting the FSP. Of all nonparticipating households, about 18 percent experienced a large drop in income in 1979, either becoming or remaining eligible for the FSP, while approximately 34 percent experienced a decrease in the number of earners present. About 5 percent of the households that experienced a large drop in pretransfer income, and became or remained eligible, entered the FSP, whereas only 1 percent of the households that did not experience a large loss in pretransfer income entered the program. Of the households that lost an earner yet still contained at least one earner, about 5 percent entered the FSP, whereas 10 percent of the households that lost their only earner or all of their earners entered the program.¹³ In contrast, less than one-half of 1 percent of the households that did not experience a drop in the number of earners entered the FSP.

¹²The percentages presented below refer to households that changed their participation status within 6 months of an event; Carr and Lubitz also presented the percentages of households that changed their participation status one, two, three, four, and five months after the event.

¹³ It should be noted that these categories are not mutually exclusive; it is likely that many households that experienced a large drop in earnings did so because of a decline in the number of earners present.

Among households that were participating in the FSP, 16 percent experienced a large increase in pretransfer income, and 83 percent of those who did left the program within six months. About 40 percent of the participating households gained at least one earner in 1979, and about two-thirds of those households went on to leave the program. This was true for households that contained no earner before the addition, as well as for those that already had at least one earner present. Only about 1 percent of the participating households that did not experience an increase in pretransfer income or in the number of earners in the household left the program during the study period.

The remaining trigger events--a drop in assets, a change in receipt of UI benefits, and a change in family composition--varied in their influence on transitions in participation status; moreover, they were relevant for only a small number of households. For instance, only 6 percent of the nonparticipating households exhausted their UI benefits during the study period. Of the households that did, 5 percent entered the FSP, but almost 4 percent of the households that did not exhaust their UI benefits also entered the program.

Williams and Ruggles (1988). Using data on a 16-month period in 1983-1984 from the Survey of Income and Program Participation (SIPP), Williams and Ruggles investigated the significance of a similar set of events hypothesized to trigger entry into or exit from AFDC and the Food Stamp Program. Among the events they examined were the addition of a baby, separation or divorce, marriage, and a job loss or gain.¹⁴ Although the research model focused on the effects of these events on changes in participation status for individuals, the events were defined in terms

¹⁴A job loss or gain was defined as a change in earnings of certain magnitude, not as a change in employment status.

of a family unit, and the actual program transitions were made by reciprocity units (which may differ from the family units).

The authors found, as did Carr and Lubitz, that the demographic changes took place among only a small number of households in the sample, whereas the labor force events were more common. Fewer than 1 percent of all food stamp recipients experienced a change in marital status or a baby's arrival, whereas close to 5 percent experienced either a job loss or gain. Family composition changes would be rare in only a 16-month study period; we estimate, for example, that of the 245 sample members whose households began receiving food stamps in an average month, only four were from families that had experienced a marriage breakup.

Nonetheless, the sample members who experienced one of the demographic events were more likely to change participation status in the next month than those who gained or lost a job.¹⁵ For example, among those who experienced a marriage breakup, about 4 percent began receiving food stamps, whereas fewer than 2 percent of those who experienced a job loss entered the program. With respect to program exit, almost 30 percent of the participants who became married left the program, whereas only 22 percent of participants who took a job left the program.

Williams and Ruggles also examined transitions separately for persons from families headed by a woman, as opposed to those headed by a man or by both a man and a woman. Too few families gained a baby or witnessed a marriage for the authors to analyze those events precisely; but for the remaining three events, the

¹⁵When comparing the discussion of this paper with that of the Carr and Lubitz paper, bear in mind that Williams and Ruggles estimated the number of people who entered or exited the program within one month after experiencing a specified event, whereas the figures presented from the Carr and Lubitz paper refer to the number of households that entered or exited the program within six months of an event.

behavior of persons from female-headed families was noticeably different from that of persons from other kinds of households. After experiencing a marriage breakup, a job loss, or a job gain, members of female-headed families were more likely to enter the FSP and less likely to leave the program. For example, among those who experienced a job loss, close to 5 percent of individuals from female-headed families entered the program, whereas only about 1 percent of individuals from other families did so.

Summary. The findings of the first three papers discussed above (Carr, Doyle, and Lubitz, 1984, and Coe, 1979, 1985) are generally consistent with the findings of the studies employing the static FSP-only approach. The household characteristics associated with a greater likelihood of entering or exiting the FSP over time were, for the most part, also those associated with the likelihood of participation in the program at a given time. These characteristics included being a household that was nonwhite, one headed by a single person, one containing children, or one receiving assistance from other welfare programs.

As did the studies based on the static FSP-only perspective, these studies give one an idea of the household characteristics that tend to be associated with participation in the FSP. The estimated effects of those characteristics on the probability of entering or exiting the program may be biased, however, since it is unlikely that employment status and participation status in other welfare programs are determined independently from FSP participation status. The analyses reported in these papers did not attempt to account for the interactions of these various decisions.

The Carr and Lubitz study and the Williams and Ruggles study differ from the first three in their focus on the effects of events that took place within the household, rather than on the effects of household characteristics per se. Theirs was

a potentially more informative approach, because they examined several events they hypothesized would have a direct effect on participation status. These two studies found that households that experienced a change in the number of earners present or a large change in income were more likely to enter or exit the FSP than households that did not experience these events. Households that experienced a change in composition were also more likely to enter or exit the program, although relatively few households experienced such a change during the time periods examined.

These last two studies provided more direct evidence on the factors involved in reaching a decision to participate in the FSP than those that employed the static FSP-only approach. But although the authors were able to trace the effects of isolated changes in household events over time, their approach still represents a simple, descriptive analysis,¹⁶ one that ignores the possibility that more than one event occurred at the same time (for example, a household suffered a loss of earnings because an earner left the household). As a result, the true driving force behind the changes in participation status is still unclear in these analyses.

3. A Study Based on the Static Multiple-Decision Approach

If, as argued above, household decisions regarding program and labor force participation are made in conjunction with one another, it would be preferable to account for their interaction when modeling participation behavior in the FSP. It is very difficult, however, to model households' decisions to participate in many

¹⁶Carr and Lubitz did provide a relatively short section on a multivariate analysis that included indicators for two of the trigger events (changes in asset and income levels) as explanatory variables. But because the results did not add any new information, and were likely to be biased because of the simultaneity of changes in income or asset levels and participation status, we did not discuss them in our review of the paper.

programs, accounting at the same time for the decision whether to work. The factors that might influence the decision to participate in one program would very likely influence the decision to participate in other programs, and the decisions would therefore be difficult to distinguish from one another.

Cognizant of this problem, Fraker and Moffitt (1988) limited the number of decisions that had to be taken into account by examining a very well-defined population: households that were headed by a single, nonelderly, nondisabled woman with dependent children and that were eligible for AFDC and the FSP in the first quarter of 1980. The authors did not exclude from their analysis women whose earnings made them ineligible for the FSP since work was one of the choice variables in the model. The sample, drawn from the ISDP, included respondents whose households were estimated to be eligible for only these two programs (Medicaid was not accounted for by the model); and the decision whether to participate in one or the other program (or both) was jointly modeled with the decision whether, and how much, to work. All told, this methodology allowed the authors to obtain relatively unbiased estimates of the effects of household characteristics on the FSP participation decision.

Fraker and Moffitt assumed that households maximize their well-being (utility) with regard to hours worked and income, subject to a realistic, and consequently very complex, income constraint. This constraint accounts for the food stamp and AFDC benefit formulas, federal income and social security taxes, and variations in wages with the number of hours worked.

Fraker and Moffitt's findings on participation in the FSP generally agree with those of the studies reviewed earlier. Higher education levels and age reduced the probability of participation, whereas minority status and the number of children under age eleven, especially the number under age five, increased the probability of

participation. The higher a respondent's wage, net of positive taxes, the less likely her household would be to participate in the FSP, while the benefit reduction rate, or the rate at which participants' benefits are reduced for earned income, did not seem to play a significant role in the household's decision. Interestingly, the amount of nonwelfare unearned income did not seem to affect the decision whether to participate, whereas a higher maximum food stamp benefit increased the probability that the household would participate. Fraker and Moffitt also found that when they simulated small changes (that is, ones of the magnitude often considered by program administrators) in the food stamp allotment and benefit reduction rate, their effects on the number of hours respondents worked were small.

The authors found a strong positive and significant correlation between the disturbance terms in the AFDC and FSP participation equations they estimated, implying that many of the same unobservable factors affected the two participation decisions. They also found significant negative correlations between the error terms in the FSP and AFDC program participation equations and the error term in the labor supply equation, implying that unobservable factors affected both the program participation decisions and the labor supply decision, but in opposite ways. These two findings lend credence to the notion that program participation and labor supply decisions should be analyzed together, instead of separately, since it appears that factors the researcher cannot measure, or observe, affect both program participation decisions and the decision on how many hours to work.

As stated earlier, Fraker and Moffitt's findings are consistent with the findings of the studies based on the static FSP-only approach. Education, age, minority status, and the number of children were estimated to have the same type of effect

(positive or negative) on the probability of participation in both kinds of analyses.¹⁷ Care should be taken when comparing the results of the two approaches, however, since Fraker and Moffitt examined only a subset of the FSP-eligible population. Nonetheless, as noted earlier, the comparisons that are feasible suggest that the potential bias in the static FSP-only studies may affect the magnitude, but not the direction, of the estimated effects of household characteristics on the probability of participation.

¹⁷Of the papers based on the static FSP-only approach, only Coe (1983b) and Czajka (1981) included the number of children as an explanatory variable in the estimated participation equation. For the most part, both studies found, as did Fraker and Moffitt, that the number of children in the household had a significant positive effect on the household's probability of participation.

IV. SUMMARY, IMPLICATIONS, AND CONCLUSIONS

Since recent estimates of the Food Stamp Program participation rate indicate that a significant minority of eligible households do not participate in the program (Doyle and Beebout, 1988; Ross, 1988), the reasons for nonparticipation in the FSP are of considerable interest. As noted at the outset, three more specific questions are of particular interest:

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

Many researchers have attempted to answer one or more of these questions, and their attempts make up a diverse body of literature that policymakers must try to synthesize when addressing the issue of nonparticipation in the FSP.

This paper has reviewed this literature, critically evaluating the methodologies employed. In this section, we draw together and summarize the findings as they bear on each of the three questions outlined above. We then identify the significant gaps remaining in the literature, in each case suggesting avenues for future research that may prove fruitful in rounding out our understanding of the determinants of participation in the FSP.

A. A SUMMARY OF THE FINDINGS IN THE LITERATURE

Participation in the Food Stamp Program is a challenging area of research because data and methodological limitations make precise estimation of the

determinants of FSP participation quite difficult. In this review, we have noted these limitations, and have attempted to qualify the results presented by discussing the implications of the data and the methodology which was employed. It is significant that, despite the many differences in objectives, data, and methods, several consistent findings emerge from the various analyses reviewed here:

1. Reasons for Nonparticipation

- When asked why they were not participating in the FSP, nonparticipants tended to respond that they did not know they were eligible, that they did not need the stamps, or that the costs of participation, such as administrative hassles, stigma, and distance to the program office, outweighed the potential benefits.

2. Variations in Participation Rates Across Eligibles

- Eligible households that were headed by a single man, an employed person, or a relatively more educated person, as well as those that owned their homes, were less likely to participate in the FSP than otherwise comparable households.
- In contrast, eligible households that were headed by a single woman, that contained children, or that were nonwhite, as well as larger households, were more likely to participate in the FSP than otherwise similar households.
- Eligible households that had lower incomes, and were, therefore, 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 already receiving other forms of assistance were needier, had better information about the FSP, had less adverse feelings about participation in government assistance programs, had better access to program offices, or had less additional effort required of them to meet FSP eligibility certification requirements (or some combination of the above) than comparable households that were not receiving other assistance.
- Eligible households headed by an elderly person were less likely to participate in the FSP in a given month, but if participating were less likely to leave the program, than otherwise comparable households.

- Eligible 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 participating were less likely to leave the program, than 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.

3. Factors in the Participation Decision

One study, of those reviewed here, explicitly modeled the household participation decision. To simplify the model, however, the analysis was limited to a subset of the FSP-eligible population--female-headed households also eligible for AFDC benefits. The findings of this study included:

- Households eligible for relatively high maximum food stamp benefits were more likely to participate in the program than those eligible for lower benefits.
- The wage rate, net of taxes, that a household head received seemed to play a significant role in the participation decision. Eligible households in which the head received a relatively high wage were found to be less likely to participate in the FSP than 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 significant factor in the participation decision.

In addition to these findings, the results of this study confirmed the findings from other studies. In particular:

- Households headed by an older or a relatively more educated head were relatively less likely to participate in the FSP than otherwise comparable households.

- Minority status and a larger number of children under age 11 in the household increased the probability of participation in the FSP.

B. IMPLICATIONS: THE NEED FOR FUTURE RESEARCH

Although much research has been done on the topic of participation and nonparticipation in the FSP, this review 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. Reasons for Nonparticipation

A few nationally representative surveys have asked respondents their reasons for nonparticipation in the FSP. The responses to these questions have been fairly consistent. Respondents from the households estimated to be eligible for the program tended to respond that they did not need the stamps, that they did not know they were eligible for the program, or that the costs associated with participation outweighed the potential benefits. These findings are too general, however, to offer much guidance to efforts to facilitate participation in the program. They do not explain why the respondents believed they did not need the assistance,

~~why they should be more eligible or why they viewed the costs of participation~~

ethnographic studies investigating the behavior of other cultures could be helpful here. Another potentially enlightening approach is that of focus groups, a technique market researchers employ in investigating consumer behavior. For the topic at hand, researchers could hold very detailed, probing discussions with small groups of nonparticipating eligible households about their opinions regarding the FSP and their reasons for not participating in it. The discussions could explore, for example, the "why" questions outlined above, as well as the respondents' opinions about program changes that might overcome their particular reservations about the program. Although the findings from a study using this approach would not pertain to all eligible nonparticipants, focus groups have proven to be very effective in offering preliminary data on respondents' preferences and decision-making behavior.

2. Factors Associated with Participation

In making judgments about the relative merits of alternative proposals for modifying the FSP, policymakers need up-to-date information about 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 full implementation of the Food Stamp Act of 1977. If participation behavior changed after the elimination of the purchase requirement, other provisions of the 1977 Act, or later program changes went into effect, as is likely, the existing literature obviously cannot accurately describe interactions with the FSP in its present form. In other words, the factors estimated to be significant predictors of FSP participation in the studies conducted to date may not be predictive today.

To confirm whether these effects are indeed still applicable to today's population of FSP eligibles, researchers may want to turn to the Survey of Income

and Program Participation (SIPP), a prime candidate for updating the results based on decade-old data. SIPP contains detailed information on household income, assets, and expenses, allowing a much better approximation of FSP eligibility than was possible with the data sources used in the past, such as the ISDP and the PSID. The SIPP data base also contains information on household characteristics and (self-reported) FSP participation. Although SIPP does not allow researchers to overcome all the estimation problems attending the previous analyses of FSP participation, it certainly will allow an important updating of our understanding of some of the factors associated with participation in the program.

3. Factors Associated with Entry and Exit

Although knowledge of the factors associated with nonparticipation and participation is valuable, of at least equal value is information on the specific kinds of events that induce households to enter or exit the FSP. In particular, an understanding of these events might inform policy efforts to facilitate program access while minimizing long-term dependence. A few studies have attempted to identify changes within the household that lead to changes in FSP participation status, but these 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, the need exists for more extensive research of this kind.

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 longer observation periods, than the earlier ISDP- and SIPP-based studies. Although the existing literature is illuminating, improvements in both the data and the techniques

employed would yield more concrete results. In particular, a model that accounted for other relevant household decisions would provide much more specific information about the FSP participation decision than we now have.

4. Modeling the Participation Decision

The ultimate goal in understanding how various factors affect the probability of a household's participating in the FSP is to be able to predict whether a policy recommendation will change those factors and, in turn, change the participation decisions of nonparticipating eligible households. In other words, the purpose of the research is to predict the effectiveness of different policy proposals designed to improve the rate of participation among the target population. But before estimating the potential effects of any change, one must carefully model the interactions of the participation decision with other household decisions, especially the decision to work or to participate in other assistance programs.

Of the studies reviewed here, only one (Fraker and Moffitt, 1988) estimated these interactions by using an explicit model of household decision-making behavior, and that study was restricted to a particular subset of all FSP-eligible households 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 costly. 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 needs to be done on this topic. Theoretical work developing more detailed models of the household's decision to participate would be very useful, as would applied work

estimating these models, even if limited to portions of the FSP-eligible population.¹⁸ 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 any of these future efforts.

C. CONCLUSIONS

Many studies have sought 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 the groups in the FSP-eligible population likely to have relatively high or low entry or exit rates. We know very little, however, about households' actual behavior in deciding whether to participate in the program. As a result, 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 otherwise similar eligible households, we cannot recommend how to encourage increased participation within this group, if it is so desired, until future research explains exactly why these households are not participating. Thus, the task for future research is to identify the motivations behind the behavior of eligible nonparticipants so that specific policy recommendations can be made.

¹⁸Promising new estimation techniques are being developed. For example, Barbara Steinberg, an economist at the University of Virginia, is developing an innovative methodology to account for the many program options available to low-income individuals, by incorporating them into the individual's budget constraint.

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