

Do Food Stamps Improve Household Food Security?

Results from a National Sample of Food Pantry Clients

A national sample of emergency food assistance clients in the United States was used to examine the likelihood of applying for food stamps and the effect of food stamps on household food security. Problems with selection bias, where the most food insecure households are the most likely to seek food assistance, are endemic in cross-sectional analyses and can result in counter-intuitive results. Because the data used here provide information about application for as well as receipt of food stamps, the selection bias problem can be circumvented to a degree by using the subset of the sample that has applied for stamps to analyze the impact of food stamps on food security. Results show that food secure households are less likely to apply for food stamps, and that receiving food stamps does have a positive effect on household food security among applicants, although the effect is small. The impact of food stamps on food security across different income levels is also examined, which may shed some light on why food stamps do not have a greater impact on increasing household food security even when selection bias is reduced.

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Introduction

The Food Stamp Program is one of the most widely used anti-poverty programs in the United States, reaching about five times as many households as Temporary Assistance to Needy Families (TANF), the nation's largest cash welfare program. Approximately five and a half million people in the United States received TANF in fiscal 2005, compared to nearly 26 million people receiving food stamps. The Food Stamp Program is available nationwide, with eligibility rules and benefit levels largely set by the federal government. Participation rates among those eligible for food stamps have never been close to 100 percent, however, and paradoxically, levels of self-reported "food security," defined as "access at all times to enough food for an active, healthy life" (Nord, Andrews, and Carlson, 2007), are often lower among low-income families receiving food stamps than among low-income families who do not participate in the program (see for example Wilde and Nord, 2005). Although food stamps are designed to alleviate food insecurity, empirical results have generally not been able to verify this effect (Wilde and Nord, 2005). Because of the way data on food security are collected, spanning experience over the past year, food security cannot be assessed for the same household both just before and after receiving food stamps. With episodes of food insecurity serving as a major motivation for households to apply for food stamps, problematic empirical results are not surprising.

America's Second Harvest reported that 67 percent of its clients applied for food stamps, but less than half of those applying, 36 percent of all clients, received them (A2H, 2006). Many previous studies have addressed the factors affecting participation. Food stamp use, in general, is most likely to occur for women with low current and future earning opportunities, and is affected by location and policy parameters (Blank and Ruggles 1996). Gleason, Schochet and Moffitt (1998), reviewing food stamp participation research, report that among low-income households, food stamp participation rates are highest among nonwhite and non-elderly households, and for households with children.

The objective of this paper is to assess the factors affecting food stamp application and the effect of food stamps on household food security among food pantry clients, a distinct population of low-income individuals with high reported rates of food insecurity. Detail in the data set used in this analysis allows for partial circumvention of the selection bias problem.

Data and Methods

America's Second Harvest (A2H) periodically conducts an extensive survey of emergency food assistance clients, and the resulting data set provides rich detail about their food security status, use of government programs, and their socio-economic status. In 2005, over 52,878 clients of A2H emergency food providers completed interviews. Food pantry clients made up 37,986 of those interviewed, 71 percent of the total. The sample frame and

survey administration process are explained in detail in Kim, Ohls, and Cohen (2006). Food security of client households was measured using the USDA food security module, with responses coded into the older USDA categories of "food secure," "food secure without hunger," and "food secure with hunger." For this categorization, the data were placed into categories based on the adult measures of food security so that households with and without children are directly comparable.

Two logistic regression models were estimated. The first related application for food stamps to household characteristics, including food security status. The second logistic regression model related household food security status to household characteristics and receipt of food stamps. To circumvent, at least in part, the selection bias problem relative to food stamp participation, household food security was analyzed only for respondents in households that had applied for food stamps. Although food security status is reported in three categories, the two categories of food insecurity (with and without hunger) were collapsed into one category for analysis.

Results

Being food secure had a strong, negative relationship to the probability of applying for food stamps. Being Hispanic, owning a home, owning a car, and having an employed adult in the household also decreased the likelihood of a household applying for food stamps. Having children in the household and living in a rural or suburban area increased the likelihood of applying for food stamps. Income, as a percentage of poverty, had a negative effect on the probability of applying for food stamps. Age initially has a positive effect on likelihood of applying for food stamps, but because the sign on the squared variable is negative, the likelihood decreases as respondents pass a certain age. The age at which likelihood of application begins to diminish, other factors constant, is around age 35. These results are in line with previous research on factors affecting food stamp use among the general population.

Among those who had applied for food stamps, receipt of food stamps positively and significantly improved the likelihood of the household being food secure. The interaction between food stamps and income is negative, however, indicating that the positive impact diminishes as income increases. Because the logistic regression is non-linear, interpretation of parameter estimates is not straight forward. The signs on the parameters can be interpreted easily, but the magnitude of the effect must be calculated by looking at probabilities.

To assess the impact of food stamps on the probability of household food security, probabilities were simulated for three different household types and the difference in probabilities computed. Because of the interaction with income, these calculations were made at different income levels, no income, 50 percent of poverty, and 100 percent of poverty. When the household has no income, receipt of food stamps improves the likelihood of being food secure by around 9 to 13 percent, depending on the household type. As income increases, the protective effect of food stamps diminishes in all cases. When income is at 100 percent of poverty, the impact is roughly halved, to about 4 to 5 percent.

Discussion

Results of this paper provide evidence that food insecurity is a strong motivator for application for food stamps. Thus, analyses that assess the impact of food stamps on household food security must account for this relationship or food stamp receipt will likely be found to have a counter-intuitive inverse relationship with food security. Results of this paper also provide empirical evidence that the Food Stamp Program does play a role in reducing food insecurity. Although this result may seem intuitive, because of the problem of selection bias, previous research has often not been able to find a positive link between food security status and food stamps. Another important finding is the interaction between food stamps and income level. As income increases, the impact of receiving food stamps on food security declines.

This study was limited to food pantry clients, a distinct sub-population of low-income, food needy people. Including a question about application for food stamps in large national food security surveys would allow a similar analysis of the general population.

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