

**Assessing the Relationship Between Food Insecurity Events and Food Assistance Programs
in Two Different Public Housing Communities ♦**

by
Mesfin Bezuneh
and
Zealelem Yiheyis
Department of Economics
Clark Atlanta University
Atlanta, GA 30314

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Executive Summary

In spite of the long period of economic growth and relatively low unemployment that characterized the U.S. economy over the previous decade, food insufficiency and hunger continue to affect certain segments of the population at the household and individual levels. As food insufficiency is recognized to pose long-lasting challenge to nutrition, health and social policy (as expressed in the Congressional Act of 1990), researchers both at public and private institutions have recently exhibited renewed and growing interest in its measurement and explanation in the context of the United States. This research is part of such an effort. More specifically, this study sought to investigate the prevalence of food insecurity and the temporal relationship between the timing of food hardship and the receipt of food stamps in the context of two types of low-income public-housing communities; traditional and mixed-income. Two study sites, one from each community, were selected for this purpose. They are University Homes (traditional) and Village of Castleberry (mixed-income), both of which are located in the vicinity of Clark Atlanta University, Atlanta, Georgia (USA).

The Basic approach of this study is the USDA Household Food Security/Hunger Module (or more generally the Food Security Core Survey Module (FSCSM)). The module was however modified to reflect a 30-day reference period and to elicit information, among others, on the timing of food hardship and government assistance. The modified survey instrument was then administered (by interview in person) on 322 sample households residing in the two communities.

The study found that 48 percent of the respondents were food-secure, with no or minimal perception and experience of food hardship during the reference period. The other 52% were food-insecure, some more so than others, and the percentage declining as a higher degree of food deprivation was considered. The majority of the food-insecure (69%) reported food insecurity without hunger. However, 31% of households experienced hunger, some moderately while others severely (i.e. 11% of the entire sample households). Child hunger was also reported by six percent of the households with children.

The majority of the respondents (61%) reported receipt of food stamps and other forms of government assistance (in addition to housing subsidy) in the month prior to the interview period. Fifty five percent (55%) of the recipients were classified food insecure. By and large, the distribution of non-recipients across the ranges of food security follows a similar pattern. A comparison of the distribution of the three levels of food insecurity of the “recipient” and “non-recipient” sub-samples yielded no significant difference that can be attributed to government assistance. However, government assistance has shown to improve the probability of being food secure as it interacted with living environment, generating greater beneficial effect in the environment of mixed-income housing. Independent of, government assistance, the type of living environment seemed to bear implication for food security condition. Living in mixed-income housing appears to improve the chance of being food secure, even after controlling for certain household attributes and characteristics that might account for the differences of households residing in the tow communities.

With respect to the timing of food hardship, the study finds that the number of households experiencing reduced food intake was lowest in the first two weeks and highest during the fourth week of the month. An examination of the timing of reduced food intake and

receipt of government assistance reveals the presence of a lagged temporal relationship between the two events. Relatively fewer events of reduced food intake occurred in the first two weeks when the majority of participants reportedly received public assistance. The converse was true in the fourth week when instances of reduced food hardship was the highest and receipts of government assistance the lowest.

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1. Introduction

In spite of the long period of economic growth and relatively low unemployment that characterized the American economy over the previous decade, food insufficiency and hunger continue to affect certain segments of the population at the household and individual levels (President's Task Force, 1984). As food insufficiency is recognized to pose long-lasting challenge to nutrition, health and social policy, researchers both at public and private institutions have recently exhibited renewed and growing interest in its measurement and explanation in the context of the United States (Bickel, *et al*, 2000, 1998; Carlson, *et al*, 1999; Olson, 1999; USDHHS, 1993).

Most of the recent research on the subject uses food insecurity as a core indicator of the deprivation of basic food needs. The concept of food insecurity at the household and individual levels has been an area of extensive research in the late 1980s by individual researchers and public agencies. This work culminated in a report by the Life Sciences Research Office of the Federation of American Societies for Experimental Biology, published in 1990, in which food (in) security and hunger were defined and conceptualized.

Food security: *“Access by all people at all times to enough food for an active, healthy life. Food security includes at a minimum: (1) the ready availability of nutritionally adequate and safe foods, and (2) an assured ability to acquire acceptable foods in socially acceptable ways (e.g., without resorting to emergency food supplies, scavenging, stealing, or other coping strategies).* Food insecurity, on the other hand, refers to *Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods*

in socially acceptable ways. Hunger, which is viewed as a severe stage of food insecurity, is defined as the uneasy or painful sensation caused by a lack of food. The recurrent and involuntary lack of access to food. Hunger may produce malnutrition over time Hunger ... is a potential, although not necessary, consequence of food insecurity." (as cited in Bickel, *et al.*, 2000, p. 6).

Subsequent to the release of the aforementioned report, a national benchmark measure of food security was developed and tested in order to estimate trends in household food insecurity in the United States. This process involved designing survey instruments with a view to "obtaining information on a variety of specific conditions, experiences, and behaviors that serve as indicators of the varying degrees of the severity of the condition" (Bickel, *et al.*, 2000, p. 9). The set of standardized food security questions thus determined gave the basis for what has come to be known as the Household Food Security Scale.

The Household Food Security Scale measures, using a single numerical value, the extent of household food insecurity and hunger as perceived, experienced and described by respondents. The scale is used to classify respondents into one of the following four categories, each representing a range of severity: food secure, food insecure without hunger, food insecure with moderate hunger, and food insecure with severe hunger.

Although the construction of the scale reflects and underscores the importance of household financial resource constraint as the ultimate cause of food insecurity/hunger, the scale by asking about household conditions, events, behaviors and subjective reactions provides more comprehensive information about the sense, occurrence and degree of food deprivation than can be known through traditional income and poverty measures.

The household food security survey instruments have been included as Food Security Supplement in the Current Population Survey of the Bureau of the Census since 1995. The survey results reported in USDA's Household Food Security in the United States indicate that in 2001 roughly 34 million Americans lived in food-insecure households. The data also show that the prevalence of food insecurity was greater among/in:

- Households with children than households without children.
- Single female-headed households with children than married couple families.
- Hispanic and Black Non-Hispanic households than White Non-Hispanic households.
- Central cities than in other areas of residence.
- The South and West than in the Midwest and Northeast parts of the country.

The food security instruments and scale have also been employed and tested by a number of researchers who studied the prevalence of food insecurity and hunger in the U.S. among various segments of the population including mother-headed families, children, the elderly, food-stamps recipients, ethnic minorities, recent immigrants, and other potentially vulnerable groups (Kasper, *et al.*, 2000; Polit, *et al.*, 2000; Himmelgreen, *et al.*, 2000; Lokken, 2000; Carlson, *et al.*, 1999).

2. The Issues And Background

The present study, in addition to assessing the prevalence of food insecurity in different low-income housing communities, addressed two related questions:

1. What is the "temporal" relationship between food insecurity events and government assistance including food stamps receipts?

2. Are food stamp (and other forms of assistance) recipients living in traditional or "hard unit" public housing communities worse (better) off than those living in mixed-income communities in coping with food insecurity in general, and with the events/timing of hunger in particular?

The Frequency and Duration of Hunger:

It is true that those families whose major source of income is public assistance often face food stress one time or the other during the year. But the questions are: How often does such an event occur? When does it occur? For how long does it occur? How severe is it? The interactions and effects of these events are not clearly understood especially as they relate to the status of participation in non-housing government assistance and the type of public housing community in which low-income households reside (mixed income versus "hard units" communities).

There are various indicators showing that mothers try to stretch their public assistance food allowances by, for example, diluting infant formula with water and/or feeding infants cow milk instead of infant formula, which is normally obtained through the WIC program. These occurrences are mostly common towards the end of the month (*discussions with nutritionists, Egleston Children's Hospital at Emory University*). This means that access to food varies greatly not only from month to month but also from one week to the next during any given month (see, for example, Wilde, *et al*, 2000). Hence, it is important to understand and measure the severity of hunger not only within the conventional reference period of 12 months, but also within the month, especially in relation to when the family receives food stamps and other forms of public assistance.

Traditional Low-Income versus Mixed-Income Housing: In 1994, the City of Atlanta through its Housing Authority (AHA) took a hard look at its public housing facilities in preparation for the 1996 Centennial Summer Olympic Games (AHA, 1994). As of 1994, the city

had over 14,413 individual public housing units (apartments) of which 35% (5000 units) were extremely in poor condition, and hence uninhabitable and vacant. The city also envisioned that the conditions of all public housing units, referred as "hard units," will only deteriorate at an increasing rate. Consequently, by the end of the 1990's most if not all units might be uninhabitable.

Atlanta Housing Authority (AHA) took two steps: (1) it placed 50% of its housing stock under private management, and (2) it began to "outsource" to private investors the other 50% of its public housing stock. In order to implement these steps, the AHA first raised over \$166 million in Federal Grants, and increased its section 8 certificate and voucher receipts by 61%. Second, the City, and AHA came up with a new revitalization idea, which involved "outsourcing" public *housing* (AHA, 1994). This idea of "outsourcing" public housing, which is considered the most innovative and farsighted idea in public housing today, requires some elaboration, as it is one of the key components of our study.

AHA is credited to be the first public housing authority in the United States to design, develop and actually implement a strategy that invites private investors in public housing, referred to as ***mixed-income/mixed-financing*** housing communities (AHA *Revitalization, 1999* - or www.atlantahousingauth.org, 1999).¹

¹ These communities are referred to as mixed-income/mixed-finance-since these communities are comprised of families of varied income levels and are being developed with funding from public and private equity, private debt, and tax credit sources (AHA, Revitalization Fact Sheet, 1999).

Briefly, the mixed-income/mixed-financing strategies allowed AHA to obtain approval from HUD to demolish all public housing facilities. Further, it allowed seeking effective private development partners to design communities to serve families of varied income levels and demographics as in those in public housing, Tax Credit and Market Rate housing stock. The real estate of each of the demolished facilities was leased to private investors. The private investors in turn agreed to allocate (1) 40% of the units to be occupied by those who could have been living in the public housing, the "*hard units*;" (2) 20% by those low income families who are qualified for Section 8 housing; and (3) the other 40% to anyone else who are able to pay the market rate (www.atlantahousingauth.org, 1999). The argument is that building new communities that are indistinguishable from any housing communities that are offered at a market rate will provide poor or low-income families environments that are conducive to restore hope and opportunity.

To date, AHA has developed and completed transferring four (4) former Public Housing communities with 2860 Public Housing units into 2292 mixed-income/mixed-finance communities. Two other Public Housing Communities of 1500 units are currently underway, expected to be completed by the end of this year (2001).

The AHA housing strategy and implementation process have received national recognition and various awards. For example, when the Centennial Place (formerly Techwood/Clark Howell Homes-the first public housing unit in U.S.) was completed as the first mixed-income/mixed-finance community in the country, AHA received the *John Gunther Blue Ribbon* award from HUD for best practice in serving public housing-eligible families (*AHA, Fact Sheet, 2001*). As of date, AHA still owns 10,474 conventional public housing units, the "*hard units*," comprised of 21,356 residents. Of these residents, nearly 49% (10,384) are children under the age of 18 years, and 30% are elderly (3,082), (*AHA, Fact Sheet, 2001*).

One can not help but ask the question: Are households placed in the mixed income communities better (worse) off than what they would have been if they had stayed in their old communities, the "hard unit" public housing? In other words, is the food security condition of a typical household in traditional public housing community different from that in the mixed-income community? Addressing this question in its entirety would involve a range of issues which are beyond the scope of the present study. This study explores the implications of living environment (mixed-income versus non-mixed low-income public housing communities) for food security. More specifically, the objectives of this study are as follows.

1. To describe and sort out the temporal relationship between food insecurity in general and events/time of hunger in particular, and food stamp (and other forms of public assistance) under two "different" public housing communities; and, as a by-product,
2. To validate the food security module, under the two different public housing settings/environments, that uses a shorter reference point (30 days) as opposed to the conventional twelve-month period; and finally,
3. To initiate and inform policy debate/options and research aimed at the interactions of public assistance and food security, given the new national derive for mixed income communities.

3. The Concept And Measurement of Food Insecurity

Since the Food Security Measurement Project was established in 1992, as a result of Congressional Act of the National Nutrition Monitoring and Related Research (Act, 1990), the U.S. Department of Agriculture (USDA), and Health and Human Service (DHHS) have been developing a national standard of measuring food insecurity and hunger through the national nutrition monitoring system (DHHS, 1993). As indicated earlier, one of the outcomes of the joint efforts of these two Federal Departments in this area has been the Food Security Core Survey

Module (FSCSM) which is now accepted as a standard method of measuring household food insecurity and hunger in the United States as well as Canada (Bickel *et al*, 2000; Tarasuk, *et al*, 1999; USDA, 1999, 1998). The U.S. Department of Agriculture, for example, has been monitoring the national food security and hunger status using the FSCSM since 1995 (USDA, 2000 a, b, c). The food-security module is a survey-based method that was developed to provide a numerical food security scale by describing and assessing the food security status of a given population and/or household using a 12 month reference period (i.e. preceding 12 month data). The scale is developed from household direct responses to a series of 18 questions about food security conditions and experiences.² The questions include varying degrees of severity of household food insecurity ranging from, for example, worrying about running out of food (least severe case) to skipping meals, or going without food all day (most severe case). As a result, it is a direct measure of the severity (or degree) of household food deprivation during the past year as perceived, experienced and reported by households.

The responses to these 18 questions are combined into a single measure called the household food security scale.³ Based on the scale scores, households are classified into four categories: food secure, food insecure without hunger, food secure with moderate hunger, and food insecure with severe hunger. A description of each follows as it appears in Bickel *et. al*. 2000, pp. 11-12.

² See appendix 2 for the list of these questions.

³ The scale is normally not affected by hunger due to voluntary dieting or fasting since food insecurity and hunger are the result of lack of money or other relevant resources to obtain food as implied in the 18 questions (Bickel, *et al*, 2000).

- ***Food Secure***— Households show no or minimal evidence of food Insecurity.
- ***Food Insecure without hunger***— Food insecurity is evident in household members concerns about adequacy of the household food supply and in adjustments to household food management, including reduced quality of food and increased unusual coping patterns. Little or no reduction in members' food intake is reported.
- ***Food insecure with hunger (moderate)*** — Food intake for adults in the household has been reduced to an extent that implies that adults have repeatedly experienced the physical sensation of hunger. In most (but not all) food-insecure households with children, such reductions are not observed at this stage for children.
- ***Food insecure with hunger (severe)*** — At this level, all households with children have reduced the children's food intake to an extent indicating that the children have experienced hunger. For some other households with children, this already has occurred at an earlier stage of severity. Adults in households with and without children have repeatedly experienced more extensive reductions in food intake.⁴

Adjusting the Food-Security Scale: Although the standard U.S. food security scale is measured using data based on a twelve-month reference period, it can be adjusted for other shorter reference periods (Bickel, *et al*, 2000). Since this study was focused on low-income families who were likely to be prone to frequent and severe range of food insecurity, a thirty-day reference period was utilized. The relevant questions in the FSCSM were therefore modified accordingly. (See appendix 1). Furthermore, in line with the other objectives of the study, additional questions that elicit information, among others, on the timing of food hardship and the receipt of government assistance were included in the survey.⁵

⁴ It may be noted, however, the last two categories are often combined into a broader category of food insecure with hunger, depending on the purpose of the study.

⁵ The questions we added, 10 in all, are highlighted in the food scale survey presented as appendix 2. They are: Q8b, Q10a, Q12b, Q14b, and Q17-Q19.

4. The Study Sites, And The Data

The sites for this study were University Homes and Village of Castleberry, both located in the vicinity of Clark Atlanta University in Atlanta, Georgia.⁶ University Homes, a traditional low-income public housing community, has 500 apartment units of which 493 were occupied at the time of the survey. The community housed a total population of 1, 201, with an average age of 24 years—half of them under 18 years of age, and 65% female. Single-heads of households constituted the overwhelming majority in the community (97%). The annual household income averaged \$7,449; and this was for a community with a mean family size of 2.4. Roughly one out of three householders and more than a quarter of adults aged between 18 and 54 were unemployed. The corresponding figures for the employed were 11 and 10 percent, respectively. Twenty nine percent of households in the community were with disabilities, 30% received social security benefits (S.S.I.) and 21% received temporary assistance for needy families (TANF).

Village of Castleberry is a mixed-income community, which at the time of the survey was home for 182 low-income households receiving housing subsidy. The total number of residents was 365 of whom 163 were children (45%) and 264 female (72%). Of household heads, 97 percent were single and 50 percent unemployed. Forty six percent of adults between 18 and 54 years of age were unemployed. In a community where the mean family size was two, the average household income stood at \$11,493. One out of five households had persons with disabilities and a lower proportion received S.S.I. (14%) and T.A.N.F. (9%).

⁶ The description of the study sites in this and the following paragraph is based on the demographics data summary obtained from the management offices of University Homes and Village of Castleberry. See table A1 of appendix 1 for further details.

Our sample was randomly drawn from low-income households residing in these two communities. Interviews were conducted in person and usable data were obtained for 322 households, which constituted the sample size of the present study. The sample size is 48 percent of the residents of the two communities at the time of the survey. Table 1 presents the basic profile of the sample.

As can be seen from table 1, a slight majority of the survey respondents are households with children, having an average of two and a total of 383 children under 18 years of age. A typical family has fewer than 2 dependents, totaling 412 in the sample. Family size ranges between one and seven, the former accounting for a third of the sample and the latter found in only two households. The ages of household heads range between 19 and 91 with a mean of 44 years for the entire sample. Heads of families with children are on average 23 years younger than their counterparts with no children.

Most of the households in the sample are female headed (85%); the corresponding figure for households without children is 10 percentage points lower. Of the 383 children in the sample, only 16 lived in male-headed families. Nearly two-thirds of the survey respondents reported receipt of some type of government assistance in addition to housing subsidy. The corresponding proportion is higher for households with than with no children. Dichotomizing the sample between the two communities indicates that both share similar attributes with respect to family size, number of children and dependents. However, the two communities differed substantially in their participation in government assistance programs. The proportion of households receiving government assistance in Village of Castleberry is by far lower than that of University Homes.

Table 1: Selected Sample Profile by Household Child Status and Type of Community

Characteristic	Full Sample	Children		Community	
		With	With No	U. Homes	V. Castleberry
Number of Households					
Total	322	179	143	251	71
% of Total	100	55.6	44.4	78	22
Mean Age of Household Head	44.3	34.1	56.9	46.7	35.6
Mean Number of Children	1.2	2.1	0.0	1.2	1.2
Mean Number of Dependents	1.3	2.2	0.1	1.3	1.4
Mean Household Size	2.5	3.4	1.3	2.4	2.6
Female-Headed Households (%)*	85.4	93.3	75.5	86.9	80.3
Gov. Assistance Recipients (%)*	60.9	62.6	58.7	70.1	28.2

Note: * Figures represent percent of the relevant sample and sub-samples. Gov. (government) assistance refers to non-housing assistance including food stamps, TANF, WIC and Supplemental Security Income.

Also, householders in Village of Castleberry are on average younger than those in University Homes, with a slightly lower proportion of female headship. To sum up, the sample is composed of 322 households, disproportionately female-headed, with 383 children, 412 dependents and a head count of 792.

5. Results: Summary of Findings

As indicated elsewhere, one of the purposes of this study is to investigate the prevalence and degree of food insecurity. To this end, the U.S. Household Food Security/Hunger Survey Module was administered in its modified form on the sample described above. This section summarizes the findings on food security status in three parts. First, the frequencies of responses to the 18 standard questions are presented and described, followed by a synopsis of findings on

household food security and insecurity. The last sub-section focuses on instances of children's hunger.

5.1. Household Food Security Scale Questions: An Overview of the Responses:

The standard 18 questions that constitute the food security survey and the percentage of households affirming these questions are presented in table 2. Prior to describing these findings, a brief review of the nature and implications of these questions is in order. [see Bickel et al., 2000 for details]. First, out of the 18 items in the survey, three ask about the food condition of the entire household, seven about the experiences and behaviors of adults and the remaining eight questions pertain to children and are, hence, answered only by households with children. Second, three of the 18 questions are follow-up questions, which elicit information on the frequency of a previously stated event (Q8a, Q12a and Q14a). Third, the survey questions were designed and administered in three stages, the first stage serving as an internal screener to the next stage of questions.⁷ Fourth, responses would be recorded as affirmative when respondents chose, as the case may be, “yes,” “often true,” or “sometimes true” as an answer to the food-insecurity question they were asked. Fifth, while the 18 questions as a whole are used to derive a measure of food security status, as a sub-group they are designed to capture four kinds of food-insecurity situations or events. Thus, affirmative responses to Q2 and Q3 would indicate an “anxiety or perception that the household budget or food supply was inadequate.” Affirming questions 4, 5 and 6 amounts to perceiving “that the food eaten by adults or children was inadequate in quality.” In affirming Q8, Q8a, Q9, Q10, Q11, Q12 and Q12a, households are

⁷ Thus, respondents would be asked the second-stage questions if they affirmatively answered any one of the first stage questions. Likewise, stage 3 questions would be posed only to households who provided at least one affirmative response to questions in the second stage.

reporting “instances of reduced food intake, or consequences of reduced intake, for adults.” Likewise, “instances of reduced food intake or its consequences for children” would be apparent when Q7, Q13, Q14, Q14a, Q15 and Q16 are affirmatively answered [Bickel, et al., 2000, p. 24].

We observe from table 2 that 63% of the respondents worried that their food would run out before they got money to purchase more. The corresponding figure for those who indicated that the food they bought didn't last is 57%. A smaller, but still a sizeable, proportion of the respondents viewed the quality of their food as inadequate. Thus, in approximately two out of five households, adults felt that they couldn't afford to eat balanced meals and had to feed their children a few kinds of low-cost food. Adults cut the size of their meals or skipped meals in one out of five families; and 70% of them did so for at least three days during the month. In 30% of the sample, adults ate less than they felt they should, although this figure dropped in half (to 15%) when asked if they ever were hungry but did not eat. Weight loss for lack of food was experienced by nine percent of the respondents. The same proportion did not eat for a whole day, two-thirds of them at least three days during the month. Events of reduced food intake and consequences thereof were relatively fewer among children. Eleven percent of the relevant sample cut the size of children's meals. With five percent (eight households), the incidence of children skipping meals is even less prevalent. The majority of the children who had to skip meals for lack of food did so for three days or more in the course of the month. Eight percent of families with children reported instances of hunger among children, but fewer events of not eating for a whole day were observed.

Presented in table 2 is also a dichotomous view of the sample on the basis of child status and type of community. Households with no children expressed a slightly stronger perception of

Table 2: Percentage of Affirmative Responses to Household Food Security Scale Questions

QN*	In the last 30 days:	Households Affirming (%)**				
		Full Sample	Children		Community	
			With	With no	U. Homes	V. Castleberry
	Stage 1 Questions					
Q2	Worried whether food would run out.	63	64.2	61.5	63.7	60.6
Q3	Food bought just didn't last.	57.1	54.7	60.1	56.6	59.2
Q4	Couldn't afford to eat balanced meals.	40.7	33.0	50.3	41.8	36.6
Q5	Relied on only a few kinds of low-cost food to feed the children.	41.3	41.3	N/A	42.9	37.0
Q6	Couldn't feed the children a balanced meal.	26.8	26.8	N/A	29.3	19.6
	Stage 2 Questions					
Q7	The children were not eating enough.	19.6	19.6	N/A	21.1	15.2
Q8	Adult(s) in the household cut size of meals or skipped meals.	21.8	19.6	24.6	24.0	14.1
Q8a	Adult(s) cut or skip meals, 3 or more days.	15.2	15.1	15.4	16.7	9.9
Q9	Ate less than felt he or she should.	29.8	25.7	35.0	33.1	18.3
Q10	Hungry but didn't eat.	14.9	13.4	16.8	16.3	9.9
Q11	Lost weight because there wasn't enough food.	9.0	6.7	11.9	10.0	5.6
	Stage 3 Questions					
Q12	Adult(s) did not eat for a whole day.	8.7	9.5	7.7	9.6	5.6
Q12a	Adult(s) did not eat for whole day, 3 or more days.	5.9	7.3	4.2	6.4	4.2
Q13	Cut size of child's meals.	10.6	10.6	N/A	12.0	6.5
Q14	Child skipped meals.	4.5	4.5	N/A	5.3	2.2
Q14a	Child skipped meals, 3 or more days.	2.8	2.8	N/A	3.0	2.2
Q15	Child hungry but couldn't afford more food.	7.8	7.8	N/A	9.0	4.3
Q16	Child did not eat for a whole day.	2.2	2.2	N/A	2.3	2.2

Notes:

* QN denotes the serial number of the questions as they appear in the Household Food Security/Hunger Survey Module.

** Figures represent percent of the relevant sample. HH stands for households and w/o for without.

food hardship than families with children (in six out of 10 items), although the observed difference is for the most part insubstantial. A considerable difference emerges when the sample is divided by community type. Families in University Homes affirmed all but a couple of items at a higher rate than their counterparts in Village of Castleberry. A differential of at least 60% is

observed in their affirmation rates to 11 of the 18 questions. For example, the proportion of households in University Homes in which adults and, in some cases children, cut the size of, or skipped, meals; ate less than they felt they should; lost weight and did not eat for whole day was at least 70% higher than the relevant rates in Village of Castleberry. This suggests that food distress was more prevalent in the former than in the latter community. To sum up, the data show, as to be expected, that the perception of inadequacy of food supply is more prevalent than that of food quality; and the latter more prevalent than instances of reduced food intake or the consequences thereof for adults and children.

5.2. Household's Food Security Status: Summary of Findings:

The preceding section presented and described the frequencies of affirmative responses to the survey questions. These item frequencies across households are useful, individually and as a sub-group, to assess the various manifestations and events of food deprivation. However, to determine the extent and severity of food insecurity, we need the aggregate value of these frequencies across the survey questions for each respondent. Accordingly, a measure of food security scale value was derived on the basis of the number of affirmative responses as per USDA's guideline. The sample was then classified into the four categories of food security outlined elsewhere. Figures 1-4 and table 3 portray and summarize these findings by family attributes.⁸

A glance at the full sample shows that 48 percent of the respondents were food-secure, with no, or minimal, perception and experience of food hardship during the reference period. The other 52% were food-insecure, some more so than others, and the percentage

⁸ See table A2 of appendix 2 for more details.

declining as a higher degree of food deprivation is considered. These households were food insecure in the sense that they “were uncertain of having, or unable to acquire, enough food to meet basic needs of all their members” at some time during the month [Nord, et al., 2001: 3]. The majority of the food-insecure (69%) had access to adequate food to avoid hunger. Respondents who experienced hunger—moderate and severe— represented 16% of the entire sample and 31% of the food-insecure group. Twelve of the households who were food insecure with hunger reported instances of an adult having gone hungry whole day at least once during the reference month. Only ten households reported food deprivation that would be characterized as severe hunger.

Figure 1: Prevalence of Household Food Security and Insecurity: Secure vs. Insecure

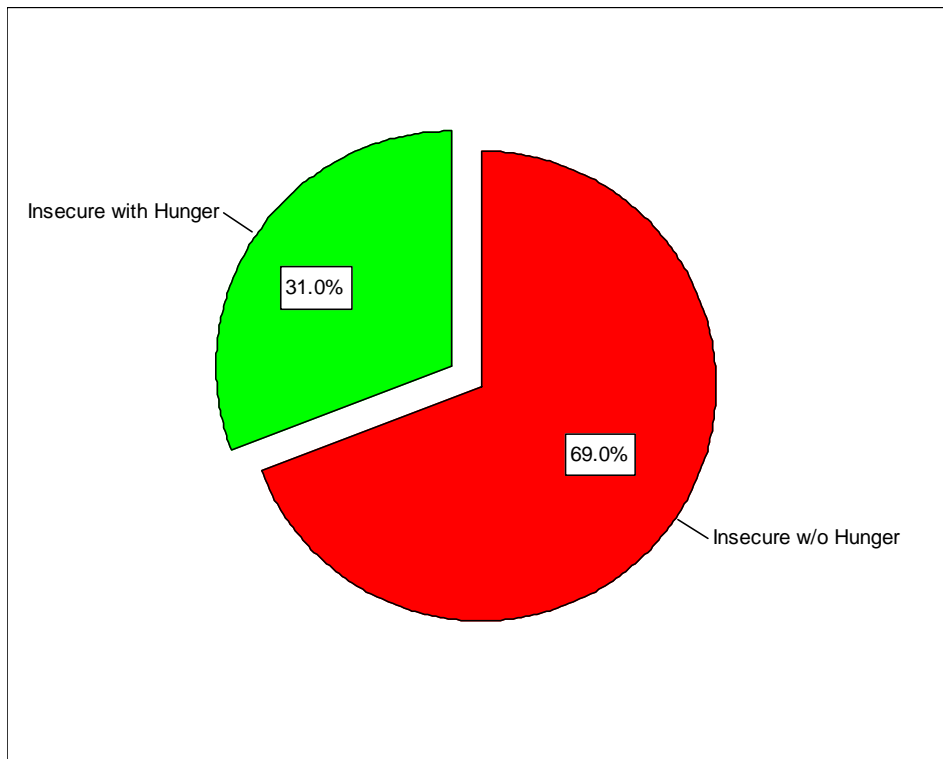


Figure 2: Prevalence of Household Food Insecurity: With vs. Without Hunger

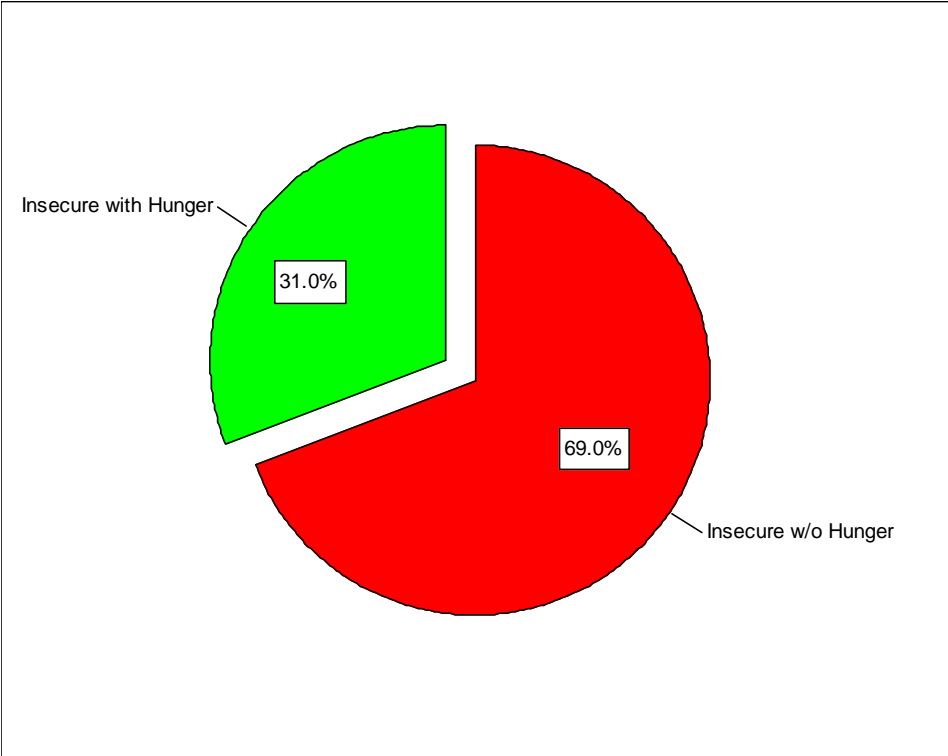


Figure 3: Prevalence of Household Hunger: Moderate vs. Severe Hunger

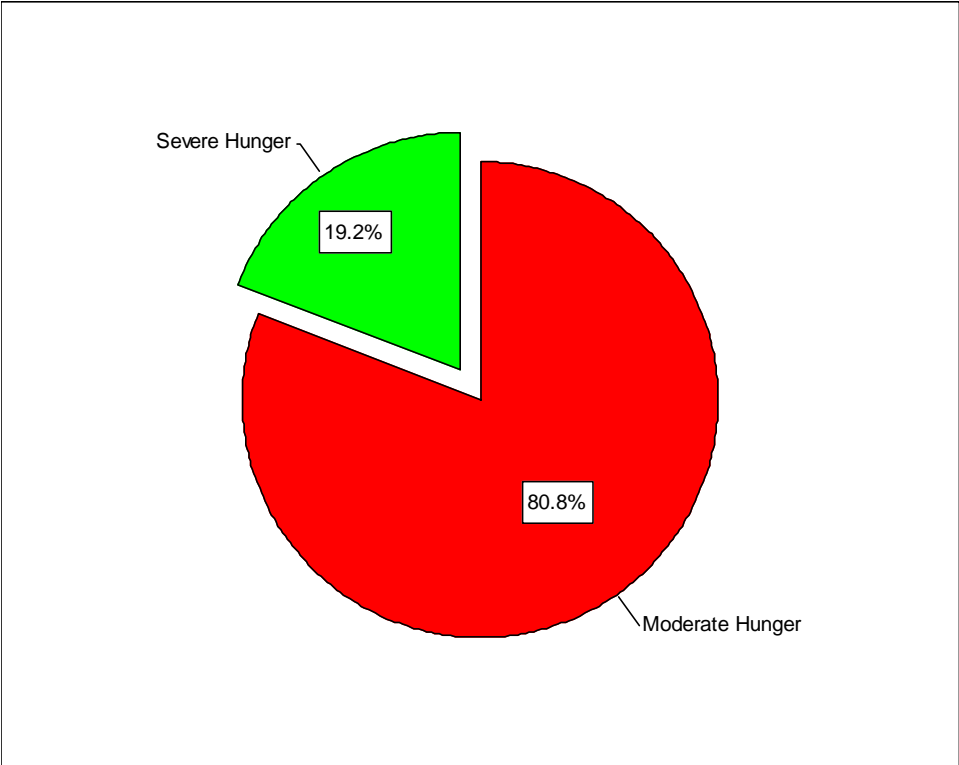


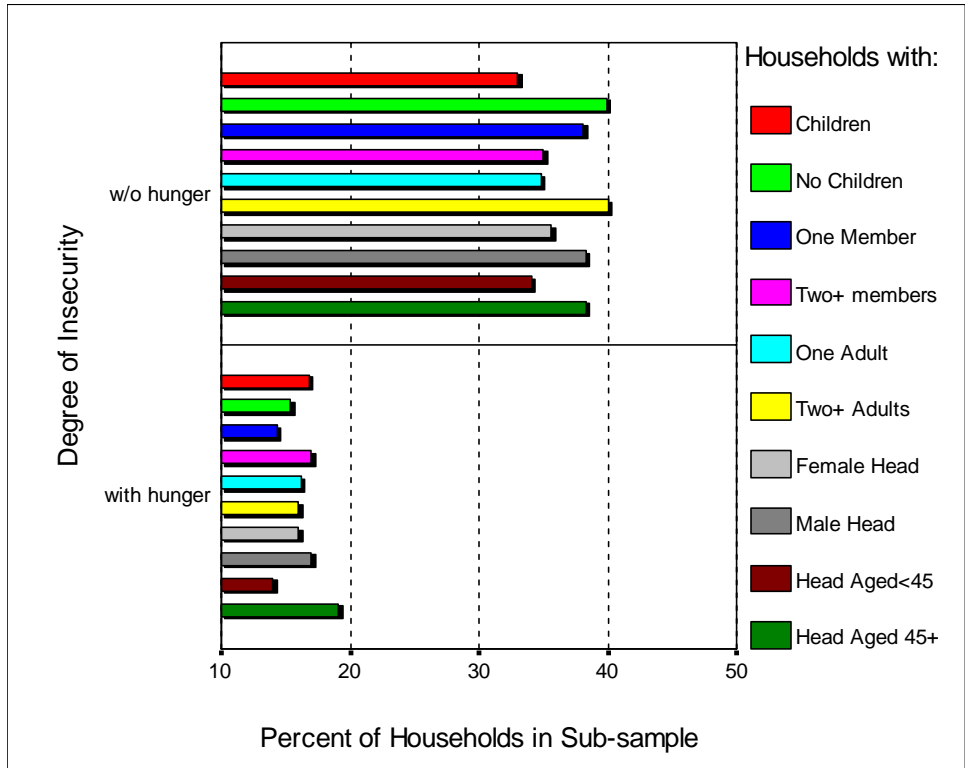
Table 3
Food Security and Sufficiency Status by Selected Household Characteristics

Category and Outcome (%)*	Full Sample	Children		Members in HH		Adults in HH		Sex, HH Head		Age, HH Head	
		With	With no	One	Two+	One	Two+	Female	Male	Under 45	45 & Over
Secure	47.8	50.3	44.8	47.6	47.9	49.0	44.0	48.4	44.7	52.0	42.6
Insecure	52.2	49.7	55.2	52.4	52.1	51.0	56.0	51.6	55.3	48.0	57.4
without hunger	36.0	33.0	39.9	38.1	35.0	34.8	40.0	35.6	38.3	34.1	38.3
with moderate hunger	13.0	12.3	14.0	14.3	12.4	14.2	9.3	12.4	17.0	11.2	15.6
with severe hunger	3.1	4.5	1.4	0.0	4.6	2.0	6.7	3.6	0.0	2.8	3.5
Food Insufficient**	16.8	13.4	21.1	19.0	15.7	15.0	23	16.4	19.6	12.8	22.1
Sample Size***	322	179	143	105	217	247	75	275	47	179	141

Notes:

- * Figures represent (within-group) percentages of the relevant sample size. HH stands for household.
- ** Households were classified as food insufficient if they reported— as a response to the first screening question of the Food Security Scale Survey—that they “sometimes” or “often” did not have enough to eat.
- *** The sample size on which the “Age, HH Head” category is based is 320 because of two missing observations.

Figure 4: Degree of Food Insecurity by Selected Household Characteristics



A closer inspection of the disaggregated data produces, for the most part, no strikingly different profile than the one just described. Households with children appear to be more food secure than households without children. A relatively marked difference appears as regards food insecurity with severe hunger, which households with children experienced at a higher rate than those with no children. Male-headed families faced a greater probability of food insecurity with moderate hunger than female-headed families, although all cases of severe hunger occurred in the latter. Living alone or with others in a household seems to matter little when it comes to the probability of being food secure, except in the case of severe hunger which was suffered by multiple-member households. Lastly, the food security scale is presented by the age of the householder in two cohorts, with the sample mean age serving as the cutoff point. It is observed that families headed by persons older than 44 seem on average to be more food insecure than households headed by younger ones.

Presented in table 3 is also a measure of food insufficiency, based on the pattern of responses to the first screening question of the Food Security Scale Survey. Respondents were categorized as food insufficient if they “sometimes” or “often” did not have enough to eat. Although this measure is known to be weaker and conceptually less encompassing than the food security measure, it is nonetheless juxtaposed for comparative purposes and as a complementary indicator of food hardship. According to this indicator, the overwhelming majority of the survey respondents were food sufficient. A concern of food insufficiency was expressed by 17% of the sample. Contrast this to the 52 percent who felt food-insecure as gauged by the pattern of their responses to the 18 survey questions. Regardless of the sub-sample considered, the percentage of food-insecure households invariably far exceeded that of food insufficient families. It may be noted, however, that the proportion of the sample classified as food insecure with hunger

approximates the food insufficiency figure reported for the full sample. This demonstrates that the majority of households in the category of food-insecure without hunger did not characterize their food supply as inadequate at the moment. Over a longer horizon than just the moment, which questions such as Q2 and Q3 suggest, the sense of inadequacy of food supply and insecurity was increasingly evident.

In sum, a slight majority of households suffered food insecurity. The probability of being food insecure was similar among the various sub-samples constructed, although some differences emerged when viewed by degree of insecurity (figure 4). Thus, individuals living alone, multiple-adult households with no children, and families headed by males and by persons 45 and older faced a slightly higher prevalence rate of food insecurity without hunger than their respective counterparts. The incidence of food insecurity with hunger was higher among multiple-member families with children and among households headed by persons 45 and older than among their respective comparators.

5.3. The Prevalence of Children's Hunger:

The data were examined more closely to determine the prevalence and severity of food insecurity and hunger among children. Although the prevalence of “food insecurity with severe hunger” could provide a reasonable proxy measure for children’s hunger, it is argued that it would underestimate the number of households with hunger among children. Supporting this view is evidence of a considerable number of households with only moderate hunger who reported instances of hunger among children [see Nord and Bickel, 1999 and 2002]. This has led to the development of a new children’s food security subscale calculated from the responses to the eight child-referenced items in the survey that ask about the conditions and experiences of

children. Recalculating the pertinent responses to derive children’s food security subscale generated the results recorded in table 4. Greater than half of the relevant sub-sample denied all the child-referenced items, indicating that the children in those households were perceived not to have experienced any kind of food-related problem. On the other extreme, six percent of the sub-sample expressed an agreement with the majority of the items asked.

According to USDA’s guide to measuring children’s good security and hunger, a clear evidence of hunger among children is said to exist when a household agrees with at least five of the eight items [Nord and Bickel, 2002]. By this criterion, the present study finds a clear evidence of hunger among children in six percent of the relevant sample (i.e. ten households). The phenomenon of child hunger was observed among 11 percent of food-insecure households with children. The extent of hunger among children may also be discerned by looking at how many of them could potentially be affected by it. Potentially, because not all children in the same reporting household would face the same degree of food hardship, as some children might be shielded from it more frequently than others by reason of age and other considerations. In any case, roughly three percent of children included in the sample resided in households with hunger among children.

Table 4: Children’s Food Security and Hunger Status

Number of Child-Specific Items Affirmed	Households with Children Affirming (%)	Children’s Hunger Status*	Food-Insecure Households with Children (%)	Mean Number of Children in Household	Number of Children in Status Category (%)**
0	54.2	No Hunger	13.5	2.2	55.4
1-4	40.2	No Hunger	75.3	2.2	41.3
5-8	5.6	Hunger	11.2	1.3	3.4

Notes:

* *Based on the conversion scheme suggested by Nord and Bickel 2002. This scheme classifies households who affirmed at least five of the child-referenced items as showing clear evidence of hunger among children.*

** *Figure represents percent of the total number of children included in the sample.*

It is interesting to note that no positive association appears to exist between the number of children in a family and the probability of child hunger in that family. On the contrary, the average number of children is higher in households where no hunger or reduced-quality diet was reported than where evidence of child hunger was found. In fact, the mean number of children in families with hunger among children is less than 2.1, which is the average for all households with children. More tellingly, eight of the 10 households with hunger among children have only one child each.

The data plainly show that the overwhelming majority of households with children—even the majority of the food-insecure ones among them—reported no instance of child hunger. Nonetheless, a sizable segment underwent some type of food distress among children. Nearly two out of five households with children affirmed at least one and as many as four child-specific questions, suggesting that unspecified number of children in those households encountered some type of food hardship, which may have manifested itself in reduced-quality diet and/or reduced variety. This occurred in three out of four food-insecure households with children, leaving only 14 percent unaffected. The exercise in recalculating the child food security subscale disclosed that seven of the 10 households with hunger among children were classified as food-insecure with severe hunger while the remaining three were placed in the category of food-insecure with moderate hunger, reinforcing the aforementioned concern about employing “severe hunger” as a measure of the prevalence of child hunger.

6. Living Environment and Government Assistance: Implications for Food Security

Demonstrably, most of the various groups constructed along household attributes exhibited like patterns as regards the prevalence and degree of food insecurity. As previously

mentioned, 61% of the sample reported receipt of non-housing government assistance in the month prior to the interview period,⁹ and 78% resided in a traditional low-income public housing community. This section assesses the implications of these differences—as regards participation in government assistance and living environment—for food security along two dimensions. First, the separate and interactive effects of government assistance and living environment on the degree of food security scale are examined, followed by an assessment of the temporal relationship between instances of food hardship and receipt of public assistance.

6.1. Government Assistance, Living Environment, and Food Security Status:

This sub-section compares the food security status of recipients with non-recipients and that of residents in traditional public housing community with those in mixed-income housing to derive implications for the prevalence and degree of food insecurity among the study population.

Government Assistance and Degree of Food Security: Government assistance programs are enacted, depending on the objective of the specific program, to alleviate one or the other dimension and manifestation of poverty. Various forms of public assistance, especially food stamps, are expected to alleviate food insecurity and hunger and enhance the food security status of recipients. To investigate whether public assistance exerted the desired and expected favorable effect on the food security status of the sampled households, the “with-without” comparative approach is employed, with non-recipients serving as the control group. The results of this comparison are recorded in Table 5 and depicted in the accompanying figure.

A slight majority of households who received government assistance are classified as food insecure, 17% with hunger. The corresponding figures for non-recipients are somewhat

⁹ Henceforth, government and public assistance are interchangeably used to refer to non-housing government assistance, which includes S.S.I., T.A.N.F. (welfare) and food stamps, as reported by respondents.

smaller. Recipients affirmed hunger among children at more than twice the rate non-recipients did. Although the differential is hardly sizeable, recipients appear to be less food secure, or more insecure, than households that did not receive government assistance.

Table 5: Household Food Security and Selected Household Characteristics by Receipt of Government Assistance

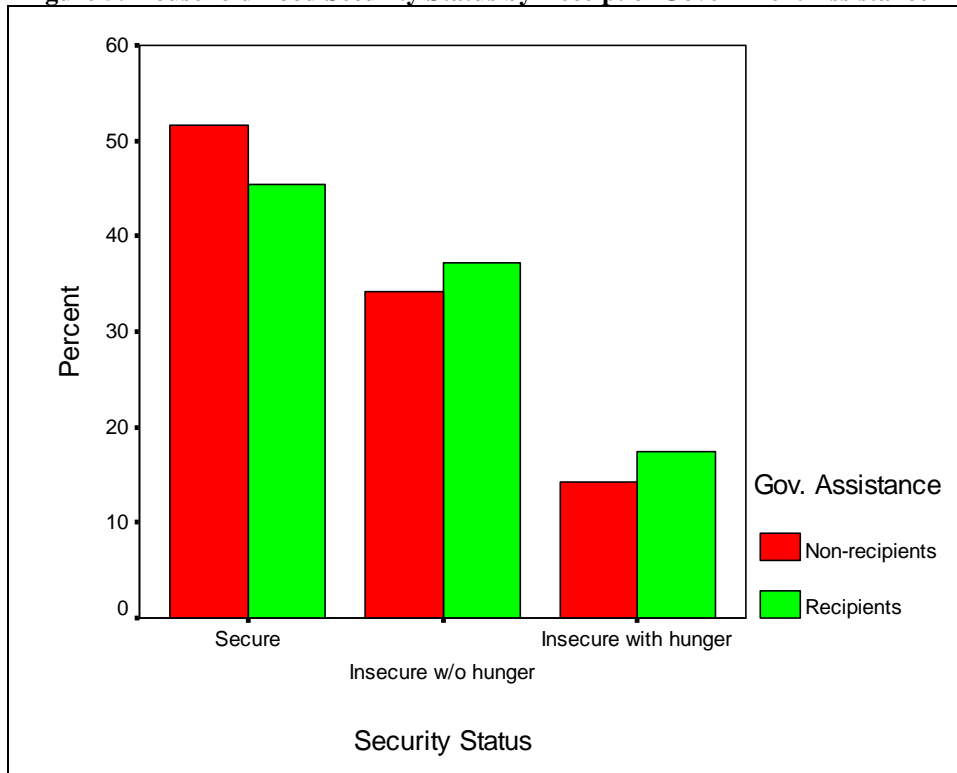
Category	Public Assistance	
	Recipients (%)	Non-recipients (%)
Food Security Status:		
Secure	45.4	51.6
Insecure without Hunger	37.2	34.1
Insecure with Hunger*	17.3	14.3
Child's Food Condition:		
No Child Hunger	92.9	97.0
Child Hunger	7.1	3.0
Selected Household Characteristics:		
Households with children	57.1	53.2
Households with two or more adults	19.4	29.4
Households with one or more persons employed	11.9	57.6
Adults employed	11.3	47.9
Sample**	196	126

Notes: * Food insecure with moderate hunger and with severe hunger combined.

** Sample size refers to the number of households in the dichotomous classifications of each column. Other figures represent percentages of households (in one case, of adults in households) in the relevant group (indicated in the column captions) with the specified attributes.

The foregoing comparison is predicated on the assumption that the two groups are otherwise homogenous. This, however, is not the case as a look at the third segment of table 5 discloses. Summarized in that segment are some of the distinguishing features that are apparently pertinent to household food condition and on which data were available. Those who received government assistance had a slightly higher proportion of families with children than non-recipients which, in turn, comprised a higher percentage of households with at least two adults. More strikingly, the proportion of families with employed members among non-recipients is roughly five times the rate among recipients. The corresponding factor of differential with respect to the rate of employment is four.

Figure 5: Household Food Security Status by Receipt of Government Assistance

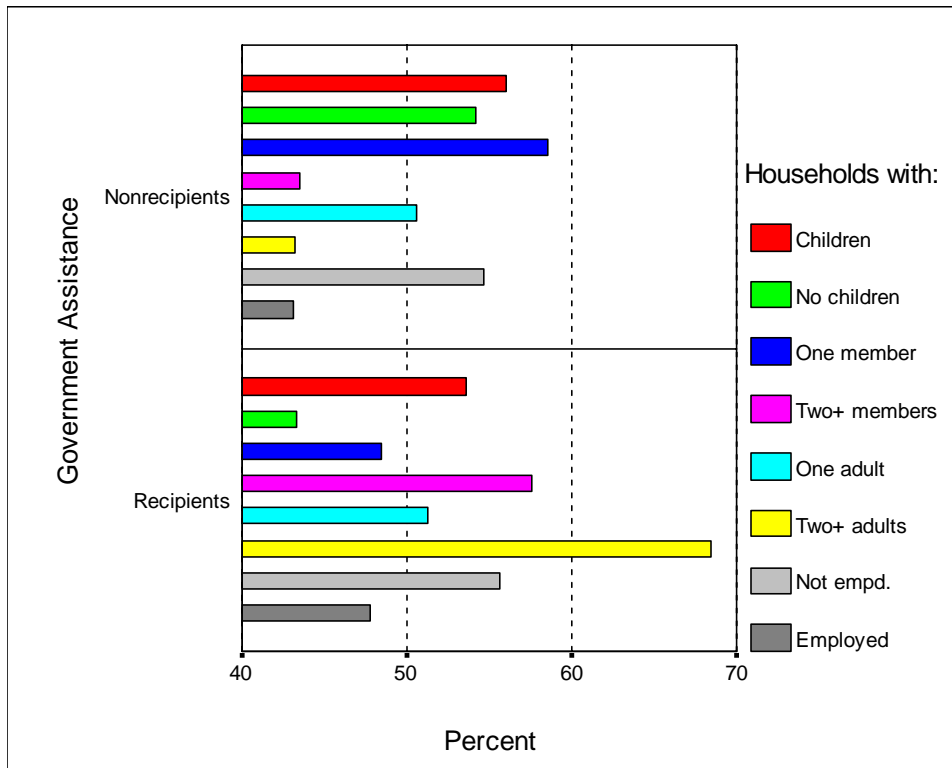


Controlling for these household characteristics somewhat magnified the inter-group differential previously described (figure 6). Compared to non-recipients, the prevalence rate of food insecurity among recipients was:

- Lower in one-member households and in families with no children.
- Higher in households where there were at least two members, two adults and one or more wage earners.

On the other hand, the food insecurity rate was roughly equivalent among households with children, with one adult and with no employed member.

Figure 6: Prevalence of Food Insecurity by Receipt of Government Assistance



With respect to intra-group differences, among those who did not receive government assistance, a higher prevalence rate of food insecurity is recorded for households with:

- One member than two or more.
- No wage earners than with employed adults.
- One adult than with two or more adults.

Among recipients, households with children and with no employed adults were found more food insecure than their counterparts with contrasting attributes. It is interesting to note that the insecurity differential previously mentioned with respect to family size and number of adults is reversed by the experience of those who received assistance from government.

Living Environment and Degree of Food Security: Does living environment in the sense of residing in traditional public versus mixed-income housing community affect the degree of food

insecurity? In other words, are residents in traditional public housing better or worse off than their counterparts in mixed-income communities in their food security condition? A comparison of the food security status of the two groups of residents indicates that the prevalence rate of food insecurity was nine percentage points higher among the respondents in traditional than among those in mixed-income housing (table 6). Both levels of food insecurity were found relatively lower in the latter community (figure 7). It may be noted that the inter-community differentials across the three levels of food security are slightly, but consistently, greater than those observed between recipient and non-recipient groups compared earlier.

That mixed-income residents were relatively more food secure could plausibly be due to inter-community differences other than living environment. As table 6 shows, the two communities also differ in a number of household characteristics. Village of Castleberry has higher proportions of families with children and multiple-member households than University Homes. The employment rates of adults and the percentage of families with at least one employed member are three times as high in the mixed-income as those recorded for the other community. The latter housed a far greater proportion of households who received government assistance than the latter did: Compare 70% with 28%.

Residents in Village of Castleberry received higher income than their counterparts in University Homes, although the average annual household income levels in both communities were below the poverty line.¹⁰

¹⁰ The poverty threshold in 2002 for a two-member, one-child household headed by persons under 65 years of age was \$12,400 U.S. (Source: U.S. Census Bureau, www.census.gov/hhes/poverty/threshold/thresh02.html). The average family size, number of children and the mean age of householder for our sample are 2.5, 1.2 and 44.3 respectively (see table 1).

Table 6: Household Food Security and Selected Household Characteristics by Type of Living Environment

Category	Community (%)	
	Traditional	Mixed-income
Food Security Status:		
Secure	45.8	54.9
Insecure without Hunger	37.1	32.4
Insecure with Hunger*	17.1	12.7
Child's Food Condition:		
No Child Hunger	94.0	95.7
Child Hunger	6.0	4.3
By Selected Household Characteristics:		
Households with children	53.0	64.8
Households with two or more adults	20.0	35.2
Households with one or more persons employed	20.6	62.0
Adults employed	17.5	53.5
Households receiving government assistance	70.1	28.2
Average annual household income**	\$7,449	\$11,493
Sample**	251	71

Notes: * Food insecure with moderate hunger and with severe hunger combined.
 ** Except for average annual income and sample size, all figures represent percent of households (in one case, of adults in households) in the relevant group (indicated in the column captions) with the specified attributes. Average annual household income figures were obtained from management offices of the communities and pertain to the resident population from which the sample was drawn.

Figure 7: Household Food Security Status by Type of Community

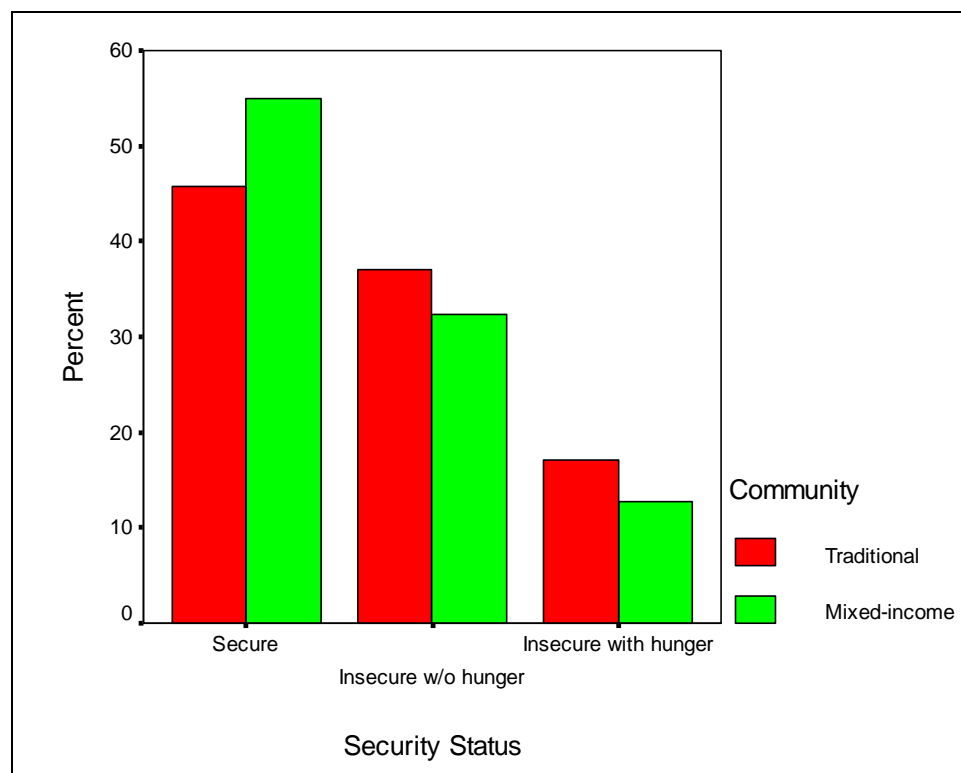
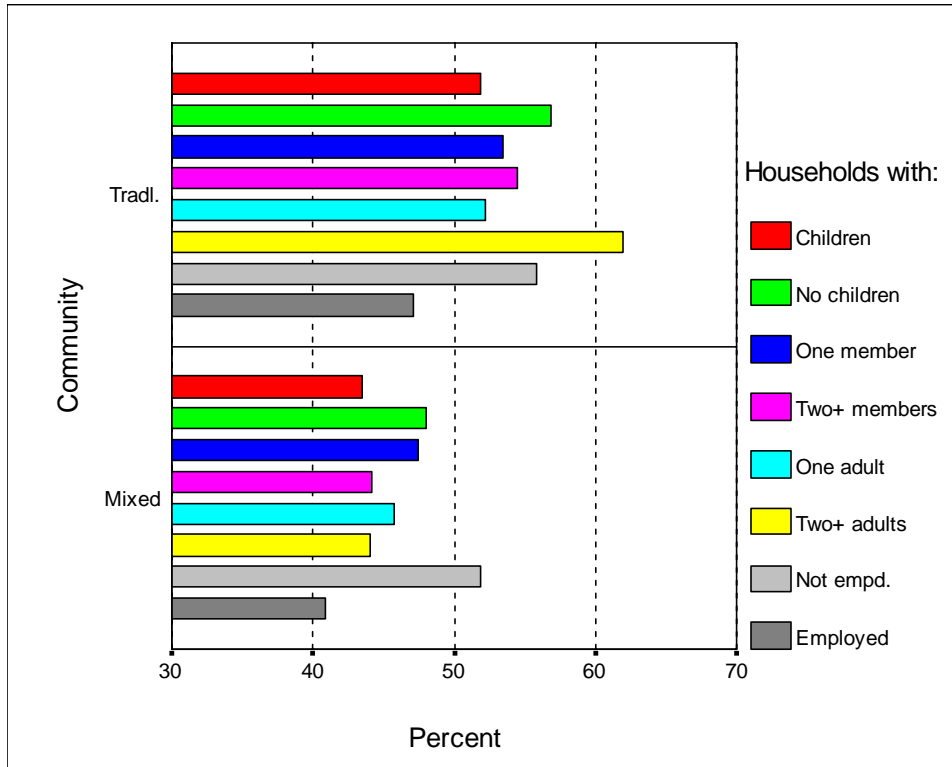


Figure 8 portrays the intra- and inter-community differences in the prevalence rates of food insecurity between the two communities on the basis of most of the household characteristics identified above. Within-community differences in the probability of food insecurity are minor except between groups based on employment status (in both communities) and on the number of adults in a household (in the traditional community). On the other hand, differences between the two communities for a given level of household attribute are relatively larger. In each category and regardless of the level of attribute considered, households in the traditional community are observed to have a greater prevalence rate of food insecurity than respondents from the mixed-income community. For instance, residents of the traditional community are on average more food insecure than those of mixed-income housing regardless of the employment status of household members. Households with at least one employed member are less food insecure than households with no employed members; and among the latter, those residing in mixed-income housing appear to be less food insecure than their counterparts in the other community.

The Interactive Effect of Government Assistance and Environment on Food Security:

The receipt of government assistance was found to have no discernable effect on food security while living in a mixed-income community appears to be associated with higher degree of food security. The rates of participation in government assistance programs in the two communities are diametrically different, with 70 percent in University Homes and 28 percent in the other community. Likewise, the distribution of recipients between the two communities is lopsided, with only 10 percent of them living in the mixed-income housing community. Having assessed the separate effect of government assistance and living environment, next we explore whether

Figure 8: Prevalence of Food Insecurity by Type of Community



the two factors interacted with each other in influencing the prevalence of food insecurity among the study population. This is accomplished by comparing the prevalence rate of food insecurity of the two communities by holding the variables in which they are known to noticeably diverge: Employment and participation status in government assistance programs. Subsequently, inter-community differences among recipients are explored.

Comparative results emerging from the three-way classification of table 7 include the following. First, the single largest category in the traditional community comprises government-assisted households with no working adult (63%). In contrast, roughly one-half of the respondents in the mixed-income community were non-recipients who reported employment income. Second, those who reported receipt of both government assistance and wage income constituted the smallest category in the two communities. Third, in the traditional community,

Table 7: Government Assistance, Living Environment, and Employment Status

Employment and Receipt of Assistance Category	Community					
	Traditional			Mixed-income		
	Total in Row Category	Category as % of Community	Secure as % of Category	Total in Row Category	Category as % of Community	Secure as % of Category
Not employed, Non-recipient	40	16.1	45.0	13	18.3	46.2
Not employed, Recipient	157	63.3	43.9	14	19.7	50.0
Employed, Non-recipient	34	13.7	55.9	38	53.5	57.9
Employed, Recipient	17	6.9	47.1	6	8.5	66.6
Total	248	100	N/A	71	100	N/A

the probability of being food secure was the highest among households with employed adult(s) who did not receive government assistance. In the mixed-income housing, on the other hand, those who received assistance and wage income were relatively more food secure than households in the other categories. Fourth, controlling for employment status, recipients of government assistance in the traditional community are less food secure, at best as (in)secure as, non-recipients: 44 versus 45 (not employed) and 56 versus 47 (employed). This contrasts to the experience of mixed-income housing residents for whom, given employment status, receipt of government assistance is associated with higher probability of food security: 50 versus 46 (not employed) and 67 versus 58 (employed). Fifth, in all categories, mixed-income housing residents enjoyed a higher probability of food security than their counterparts in the traditional community, although the differential with respect to non-recipient categories, with or with no employed adult, is negligible. Among recipients of public assistance, the probability of food

security is invariably higher among mixed-income housing residents, with a gap of 20 or six percentage points depending on the status of employment.

One might surmise from these comparative results that the effect of government assistance on food security status depended more on differences in the living environment than on employment status. It appears that, given the status of employment, living environment interacts with participation in government assistance program in influencing the probability of being food insecure. This possible interactive effect is further examined with the aid of figures 9 and 10, which depict the food security conditions of households who received government assistance.

As noted above and as is apparent from figure 9, given the receipt of government assistance, those who resided in the mixed-income community enjoyed a higher degree of food security than their counterparts in the traditional community. The differences are relatively larger at both ends of the security scale.

Figure 10 compares the prevalence of food insecurity among recipients by controlling for selected household characteristics in addition to employment status. Clearly, intra-community differences emerging from the dichotomy of selected household attributes are rather insubstantial in the traditional community except that pertaining to the number of adults. In contrast, the prevalence rate of food insecurity varies considerably within the mixed-income community across the designated sub-groups. Comparing the two communities for a given category of household characteristics, it is observed that recipients of government assistance in the traditional community were more food insecure than those in the other community in all categories except in one-adult families with children.

In sum, there is no clear evidence that government assistance influenced the probability of being food secure in the study population at the aggregate level. However, its potential positive impact was magnified as it interacted with the environmental effect. The type of living environment seemed to have a relatively noticeable effect on the prevalence of food security, even after controlling for certain household attributes that might affect the relationship between the two variables.

Figure 9: Food Security Status of Recipients of Assistance by Type of Community

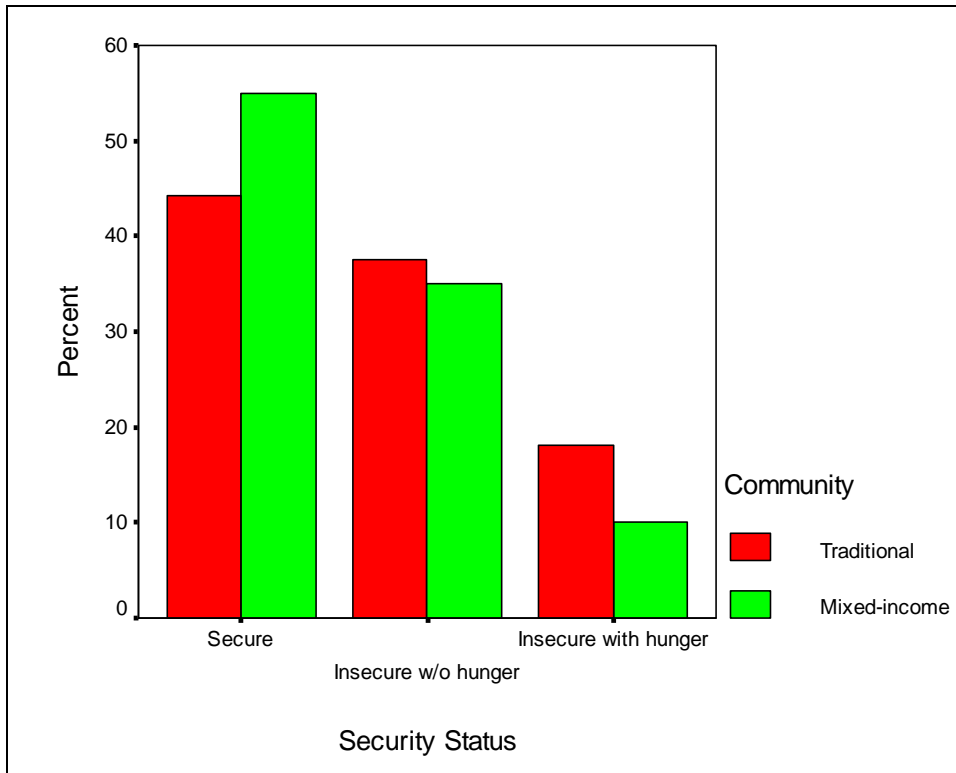
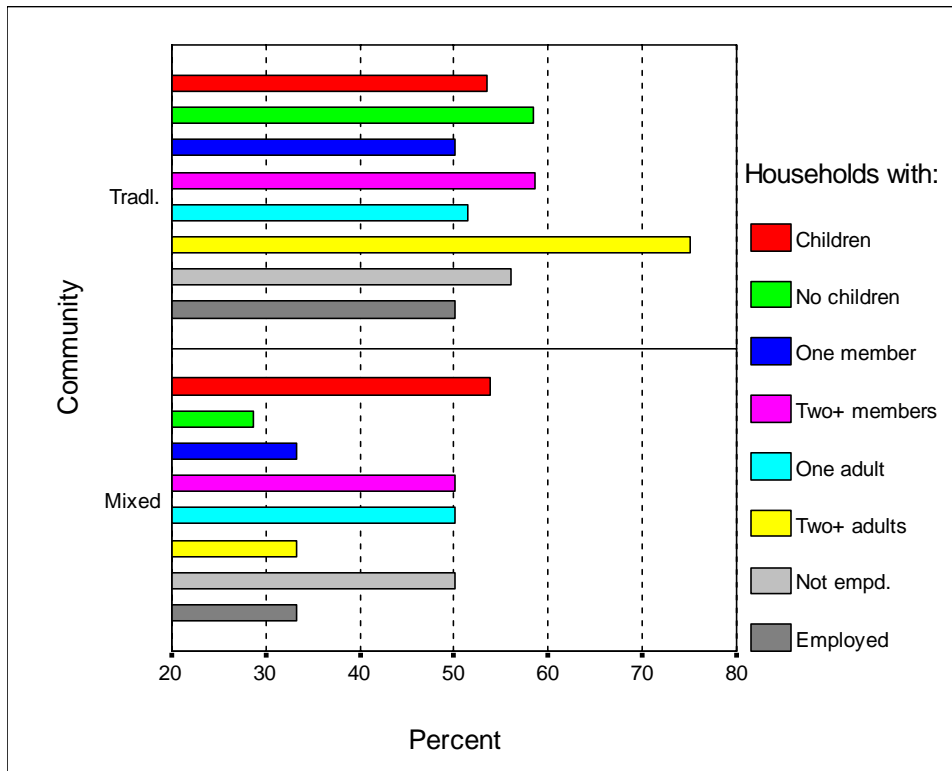


Figure 10: Prevalence of Food Insecurity among Recipients by Type of Community



6.2. The Timing of Reduced Food Intake and Receipt of Government Assistance:

This sub-section addresses the temporal relationship between the timing of food hardship events and that of the receipt of government assistance including food stamps. The type of food hardship considered in the forthcoming discussion is reduced food intake. For our purpose, we will focus only on four survey items which are, when affirmed, indicative of reduced food intake and for which follow-up questions about timing were added in the survey instrument. Table 8 lists the said items and the associated frequencies, representing the number of respondents who reported the specified food hardship and who also identified the week when the hardship was encountered

Table 8: Number of Households Experiencing Reduced Food Intake by Week of Occurrence

QN*	Type of Food Hardship	Week of the Month			
		First Two Weeks	Third Week	Fourth Week	Total
8b	Adult cut size of, or skipped, meals.	5	14	31	50
10a	Adult hungry but did not eat.	8	12	25	45
12b	Adult did not eat for whole day.	4	7	13	24
14b	Children skipped meals.	0	3	5	8

Note: * QN denotes the serial number of the questions as they appear in the household security scale survey administered.

In fifty households (16% of the sample) had adults cut the size of, or skipped, their meals. For 62% of them, this occurred during the last week of the month. For 56% of households with adults who were hungry but did not eat, the stated hardship took place on the fourth week. Similarly, the majority of the reported instances of adults going without eating the whole day and children skipping meals happened during the last week of the month. Emerging from the table is an interesting and a consistent pattern. The number of households experiencing reduced food intake was lowest in the first two weeks and highest on the last week of the month. It appears that the incidence of hunger has a time dimension to it, varying from one week to the next in a fairly predictable manner.

The pattern that is evident in table 8 would naturally impel one to seek explanations. The timing of the receipt of government assistance is argued here to be at least one of them. To aid in our investigation of the temporal relationship between reduced food intake and receipt of assistance, we focus on reduced food intake by adults; and the number of households with adults experiencing reduced food intake was obtained by counting families who provided responses to one or more of questions 8b, 10a and 12b.¹¹

¹¹ A similar pattern was observed for 14b. See table A3 in appendix 2 for details on frequencies of responses on each of the four questions by timing of food stamp receipt.

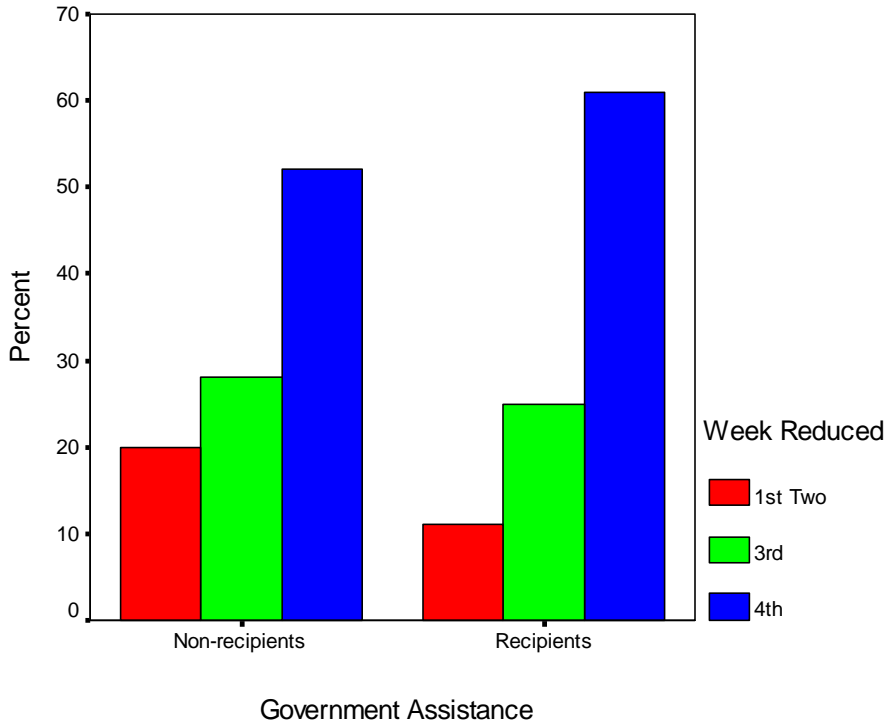
Table 9: Number of Households with Adults Experiencing Reduced Food Intake by Week of Occurrence and Receipt of Assistance

Week of the Month	Recipients	Non-recipients	Total
First Two Weeks	5	5	10
Third Week	12	8	20
Fourth Week	27	14	41
Total	44	27	71

A glimpse at table 9 discloses that 22% of the total sample (71 households) had one or more adults who cut the size of, or skipped, their meals; or were hungry but did not eat; or went without eating for whole day for lack of food. Adults in most of the households (61 or 86%) experienced reduced food intake during the third or fourth week of the month. Sixty two percent of the households under consideration received government assistance, which approximates the percentage obtained for the whole sample. Although the occurrence of food hardship exhibited the same pattern in both groups, its profile over time is much steeper in the recipient than in the non-recipient group. The number of recipient households with reduced food intake in the last week of the month is more than five times that recorded for the first two weeks. The corresponding increase for the non-recipient group was by less than a factor of three (figure 11).

To examine the temporal relationship between the timing of food hardship and of the receipt of assistance, we focus exclusively on recipients of government assistance. As can be gleaned from table 10 and figure 12, of those who received government assistance 80% did so during the first two weeks of the month and the remainder during the third week. No household received assistance during the last week of the month. This was the week when the majority of the relevant sample (61%) experienced reduced food intake. The proportion of households suffering reduced food intake progressively increased as the percentage of households receiving

Figure 11: Households with Adults Experiencing Reduced Food Intake

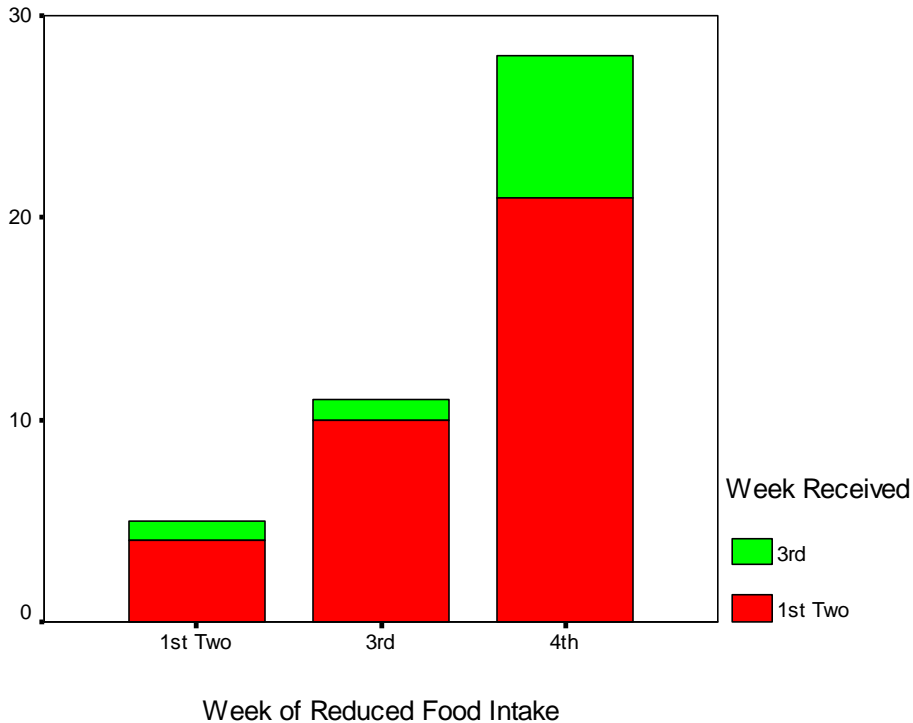


assistance decreased from the first half to the latter weeks of the month (see shaded percentage figures in the last row and column of the table). Hunger was most prevalent when no assistance was received and least prevalent when assistance was received the most. This suggests a negative temporal relationship between the event of food hardship and the receipt of government assistance.

Table 10: Number of Households Reporting Reduced Food Intake and Receipt of Government Assistance by Week of Occurrence

Week of Food Hardship	Week When Assistance Was Received				
	First Two Weeks	Third Week	Fourth Week	Total	Total (%)
First Two Weeks	5	1	0	6	13.6
Third Week	10	1	0	11	25.0
Fourth Week	20	7	0	27	61.4
Total	35	9	0	44	100
Total (%)	80	20	0	100	N/A

Figure 12: Number of Households Reporting Reduced Food Intake and Receipt of Government Assistance by Week of Occurrence



7. Discussions and Conclusions

This study found that little more than half of the sample experienced food insecurity, a smaller proportion with hunger. Albeit marginally in the majority of cases, the prevalence rate of food insecurity was found to be higher among:

- Households without than with children.
- Multiple-adult than single-adult families.
- Male-headed than female-headed households.
- Households headed by persons under 45 years of age than older persons.
- Recipients than non-recipients of government assistance.
- Households in the traditional low-income than in the mixed-income communities.

However the sample is decomposed, the findings suggest a high prevalence of food insecurity and hunger among the study population, although this may not be surprising for a sample drawn from low-income communities. In any case, the results do not seem to underestimate the prevalence and severity of food insecurity as a comparison of these results with those of other studies makes clear (see table A4 of appendix 2). According to USDA's report on Household Food Security in the United States in year 2001, the average rate of food insecurity in the nation was around 11 percent. The corresponding number for the category of food insecure with hunger was three percent, which is dwarfed by the 16 percent recorded for our sample.

That the prevalence of food insecurity in our sample is higher than the national average is also evident when our sample is compared with groups sharing certain similar characteristics. Thus, about 21% of households in the black non-Hispanic category were classified as food insecure, six percent with hunger. Of households with incomes below the poverty line, the food

insecurity rate was 37%, still lower than the rate found for our sample. For this group, insecurity with hunger was experienced by 13% which is closer to what was found in our sample. Likewise, the number of households with hunger among children in the sample was hardly insubstantial by national standards. The four percent prevalence rate found in our study by far exceeds the national averages reported. In year 2001, the national average for all households with children was 0.6 percent. Looking at groups closer in certain attributes to our sample, we find in the same report 1.3 % for Black non-Hispanic, 2.2% for households below the poverty line and 1.3% for those residing in central cities.

To place our findings in a sharper perspective, they can also be compared with the survey results reported for households sharing more than one of the attributes of our study population. Thus, 41% of low-income households (income below 130 percent of the poverty line) in the black community were food insecure. The corresponding figure for low-income families from the South and from central cities in metropolitan areas was 34 percent. These percentages, albeit closer, still represent a lower prevalence rate of food insecurity than found in our study. On the other hand, our findings are comparable to the results of some specific studies. For example, a recent investigation of the food security condition of poor, mother-headed families reported a food-insecurity rate of 49%, about 15% with hunger. Households with hunger among children were around five percent of the sample [Polit et al., 2000]. On the other hand, the degree of food insecurity in our sample is much lower than the 81% documented in a study on the hunger status of legal immigrants in the states of California, Texas and Illinois [Kasper, et al., 2000].

A comparative view of our result should, however, take into account the fact that the sample was drawn from low-income housing communities where rental payments were subsidized. The additional expenses that households would otherwise incur to pay full rents

could be avoided and the monies thus freed could possibly be reallocated to augment household's food budget and thereby abate the extent of food insecurity. Furthermore, some households' food hardship may have been mitigated by government assistance, given that 61% of the sample received it. The food insecurity rate would certainly have been higher had it not been for government assistance, although no clear relationship could be established, in the aggregate data, between the two variables after the fact.

The absence of strong relationship between government assistance and food security status is, on surface, contrary to conventional expectation. In general terms, while some households may have become food secure because of government assistance, others may have remained food insecure in spite of it. Some explanations may conjecturally be offered, however. One common reason adduced is the process of self-selection whereby those households who received government assistance did so because they were, in the first place, demonstrably more needy and more food insecure than those who did not qualify to receive assistance. This may partly explain why 64% of the food- insecure households were recipients of government assistance. Since belonging to either category is not a result of a randomized process, it is difficult to isolate the effect of government assistance on the degree of food security. That said, however, the fact that a number of households remained insecure in spite of government assistance may speak to the inadequacy of the assistance they received. Perhaps, for the assistance to make a dent on food insecurity there may be a threshold of assistance required. The issue is therefore not only whether assistance is received, as important as that it is. The amount and kind of assistance and the frequency with which it is received as well as how its continuity is perceived by recipients are all consequential in evaluating the efficacy of government assistance in alleviating food insecurity.

Although the effect of government assistance on food security status was found imperceptible, it was nonetheless far from irrelevant as a closer inspection of the disaggregated data indicated. Some recipients felt a higher degree of insecurity during the week of the month when they did not receive assistance than during the week when assistance was disbursed. Further, government assistance was shown to improve the probability of being food secure as it interacted with living environment, generating greater beneficial effect in the environment of mixed-income housing. Independently of, or interactively with, government assistance, the type of living environment seemed to bear implication for food security condition. Living in mixed-income housing appears to improve the chance of being food secure, even after controlling for certain household attributes that might affect the relationship between the two variables.

In characterizing households' food condition as secure or insecure, the inherent caveats of the household food security scale must not be ignored. For example, our finding that suggested that 48% were food secure does not mean that all households placed in that category affirmed none of the survey items. In our study only 30% of the sample (29% of households with children and 32% of households with no children) denied all the questions, which means these households experienced no problem or expressed no concerns regarding their food condition. The remaining 70% encountered at least one type of food distress (see tables A5 and A6 of appendix 2).

Some of the families classified as food secure (21% of those with children and 13% with no children) reported one or two indications of food insecurity, mostly in connection with scale questions 1 and 2, which, as noted elsewhere, reflect uncertainty and anxiety about the adequacy of household budget or food supply. Thus, 23% of food-secure households expressed anxiety that their food would run out before they could purchase more and 15% of them were concerned

that their food supply would be exhausted (see table A7 of appendix 2). This suggests that for some of the respondents classified as food secure, their food condition “may have been tenuous at times, especially in the sense that they lacked ‘assured ability to acquire acceptable foods in socially acceptable ways’....” [Nord et. al, 2001:38]. We hasten to add, however, that misclassification, to the extent that it occurred, was minimal in our study as can be discerned from table A8 of appendix 2. Less than 11 percent of the respondents were classified food secure while worrying that their food would run out before they got more. Much lower proportions of affirmation—in the majority of cases zero or near zero—are recorded for the other items. Of those classified insecure with severe hunger—the other extreme—very few denied the survey items.

Another well-recognized shortcomings of the food security scale remain pertain to coping strategies. Evidently, the scale recognizes some of the strategies (for example, substituting for low-cost food diets) that households employ to cope with their food hardships. It does not obviously encompass all the major strategies commonly employed by low-income families. Households who somehow make ends meet using coping strategies not included in the scale could conceivably be classified as food secure. Their sense of insecurity would probably surface if references were made to other commonly used coping mechanisms besides those included in the standard survey instrument. These coping mechanisms are likely to rise in variety and frequency for low-income families as their incomes further decrease. This calls for collecting additional data on how households attempt to make ends meet and what cost-cutting and income-augmenting strategies they use in their effort to cope with food insecurity. Furthermore, the food security scale captures neither the nutritional intake nor the safety of food eaten. Possibly, respondents can be classified as secure while consuming nutritionally deficient food. This is

important to bear in mind especially when making a causal connection between food security and health status of respondents.

The results of our study should, however, be interpreted with caution partly because of the sample size on which they are based. A total sample size of 322 households is rather small by the standards of much of the empirical literature on the same subject, although its results are reassuringly comparable to the findings reported in some of these studies. A larger sample size would have enabled us to draw stronger conclusions supported by more reliable statistical testing and evidence that higher degrees of freedom could have afforded. A related shortcoming is the paucity of cross-sectional units for our empirical investigation of the food-security effects of differences in living environment (traditional versus mixed-income communities). Because of resource considerations, our study included only one site from each of the two housing communities. The sampling of more study sites from each type of community would have enhanced the robustness of our findings and the validity of generalizations that could be made about the effect of living environment on the prevalence of food insecurity and hunger. Therefore, the results reported in this study, although informative, can only be taken as suggestive. A more definitive and conclusive assessment of this interesting phenomenon of the environmental effect requires further in-depth research based on a larger sample drawn from multiple sites from each type of living environment.

Despite its shortcomings, the food security scale is a valuable and reliable measure and our study by and large validates it in its modified format. With the aforementioned caveats of the present study in mind, one can nonetheless draw from its findings a number of tentative conclusions with policy implications, including the following. First, despite receipt of government assistance a substantial percentage of the sample remained food insecure. This may

be partly due to the inadequacy of the amount, and/or the ineffectiveness of the type, of assistance received. In the light of further investigation on this particular issue, increasing the amount and/or accordingly tailor the type of assistance provided is an appropriate policy measure to enhance the food security of households in question. Second, the incidence of food hardship was observed to occur much more frequently during the last than the first two weeks of the month. This coincided with the timing of the receipt of government assistance, giving rise to a lagged temporal relationship between the two events. This finding suggests that public assistance will probably reduce the concentration of events of food deprivation if it is dispersed at a shorter interval. Third, living in mixed-income setting is generally found to be associated with a lower degree of food insecurity. This seems to suggest that the recent shift in emphasis of public housing programs from traditional to mixed-income housing is justified, as the latter seems to provide an environment for brighter hope and better opportunity than the former. Further investigation of this issue with larger sample on multiple study sites will be needed to validate such initial results and tentative conclusions.

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APPENDIX 1: STATISTICAL TABLES

Table A1: Selected Demographics Data Summary of Resident Populations by Study Site

Household Characteristics	University Homes	Village of Castleberry
Number of Households	493	182
Total Population	1201	365
Female Population (%)	65.0	72.3
Single-Headed (%)	97.0	96.7
Households with Children (%)	56.2	54.4
Children as % of Total Population	49.9	44.7
Heads of Household Unemployed (%)	30.3	49.5
Unemployed Adults (aged 18-54) (%)	73.6	46.2
Average Age	24	24
Average Family Size	2.4	2.0
Households on S.S.I. (%)	30	13.7
Households on T.A.N.F. (%)	21	8.8
Households with Disabilities (%)	29.0	19.8
Average Household Income	\$7,449	\$11,493

Source: Demographics Data Sheet, obtained from management office of the two communities.

Table A2: Prevalence Rate of Food Insecurity by Selected Household Characteristics

Characteristics	Number of Households*	Percent Insecure**
Families with no Children	143	55.2
<ul style="list-style-type: none"> • With one adult • With multiple adults <ul style="list-style-type: none"> ○ Householder age 65 and over ○ Householder age under 65 • With at least one member employed • With no member employed 	105 38 13 25 33 109	52.4 63.2 76.9 56.0 42.4 58.7
Families with Children	179	49.7
<ul style="list-style-type: none"> • With one adult • With multiple adults <ul style="list-style-type: none"> ○ Householder age 65 and over ○ Householder age under 65 • With at least one member employed • With no member employed 	142 37 6 171 62 115	50.0 48.6 50.0 49.7 45.2 52.2
Female-Headed Households	275	51.6
<ul style="list-style-type: none"> • Living alone • Multiple members 	77 198	51.9 51.5
Male-Headed Households	47	55.3
<ul style="list-style-type: none"> • Living alone • Multiple members 	28 19	53.6 57.9
Living Alone	105	52.4
<ul style="list-style-type: none"> • Elderly (65+) • Under 65 • Employed • Not employed 	35 70 21 83	45.7 55.7 47.6 53.0
Multiple-Member Families	215	52.1
<ul style="list-style-type: none"> • With householder aged 65 and over • With householder under 65 • With at least one member employed • With no member employed 	19 196 74 141	68.4 50.5 43.2 56.7

Notes: * Number of households in category based on the household characteristics specified in column 1.

** Food insecure households as a percent of households in each category.

Table A3: Number of Households with Reduced Food Intake by Week of Occurrence and Receipt of Government Assistance

Indicator and Week of Reduced Food Intake	Week Assistance was Received			
	First Two	Third	Fourth	Total
<i>8b. Adult cut size of, or skipped, meals.</i>				
First Two Weeks	2	0	0	2
Third Week	9	1	0	10
Fourth Week	18	3	0	21
Total	29	4	0	33
<i>10a. Adult hungry but did not eat.</i>				
First Two Weeks	4	1	0	5
Third Week	6	1	0	7
Fourth Week	9	5	0	14
Total	19	7	0	26
<i>12b. Adult did not eat for whole day.</i>				
First Two Weeks	0	1	0	1
Third Week	2	1	0	3
Fourth Week	7	3	0	10
Total	9	5	0	14
<i>14b. Children skipped meals.</i>				
First Two Weeks	0	0	0	0
Third Week	1	0	0	1
Fourth Week	4	1	0	5
Total	5	1	0	6

Table A4: A Comparative View of Food Security Study Results

Study	Food Secure	Insecure without Hunger	Insecure with Hunger
Present Study	47.8	36.1	16.1
Nord, et al. (2001):			
• Among All Households:			
-All Households	83.9	7.4	3.3
-Black non-Hispanic	78.7	15.1	6.2
-Household Income<Poverty Line	67.7	23.6	12.9
• Among Low-Income Households*:			
-All Low-Income Households	67.7	21.3	10.9
-Black non-Hispanic	59.4	27.4	13.3
-Residents in Central City**	66.0	21.7	12.3
-Residents in the South	65.9	22.9	11.2
Polit, et al. (2000)	51.1	33.3	15.5
Kasper, et al. (2000)	19	40	41

Note: * Households with income below 130 percent of the poverty line.

** In metropolitan area.

Table A5: Percent of Households with Children by Food Security Row Score

Number of Food Security Questions Affirmed	Percent of Households	Cumulative Percent of Households	Food Security Status
0	29.1	29.1	Food Secure
1	11.2	40.3	
2	10.1	50.4	
3	15.1	65.5	Insecure without Hunger
4	3.9	69.4	
5	4.5	73.9	
6	5.0	78.9	
7	4.5	83.4	
8	2.2	85.6	Insecure with Hunger
9	3.9	89.5	
10	1.7	91.2	
11	1.7	92.9	
12	2.8	95.7	
13	0.0	95.7	
14	2.8	98.5	
15	0.0	98.5	
16	1.1	99.6	
17	0.0	99.6	
18	0.6	100	

Table A6: Percent of Households with no Children by Food Security Row Score

Number of Food Security Scale Questions Affirmed	Percent of Households	Cumulative Percent of Households	Food Security Status
0	31.5	31.5	Food Secure
1	6.3	37.8	
2	7.0	44.8	
3	15.4	60.2	Insecure without Hunger
4	10.5	70.7	
5	14.0	84.7	
6	4.9	89.6	Insecure with Hunger
7	6.3	95.9	
8	2.8	98.7	
9	0.7	99.4	
10	0.7	100	

Table A7: Percentage of Households Affirming Survey Items by Food Security Scale Category

Q#	Food Security Scale Questions	Food Secure Households Affirming (%)*	Food Insecure Households Affirming (%)*
Q2	Worried whether food would run out.	22.7	100
Q3	Food bought just didn't last.	14.9	95.8
Q4	Couldn't afford to eat balanced meals.	3.2	75.0
Q5	Relied on only a few kinds of low-cost food to feed the children.	5.6	77.5
Q6	Couldn't feed the children a balanced meal.	0.0	53.9
Q7	The children were not eating enough.	0.0	39.3
Q8	Adult(s) in the household cut size of meals or skipped meals.	0.6	41.3
Q8a	Adult(s) cut or skip meals, 3 or more days.	0.6	28.6
Q9	Ate less than felt he or she should.	1.9	55.4
Q10	Hungry but didn't eat.	0.0	28.6
Q11	Lost weight because there wasn't enough food.	0.0	17.3
Q12	Adult(s) did not eat for a whole day.	5.2	11.9
Q12a	Adult(s) did not eat for whole day, 3 or more days.	2.6	8.9
Q13	Cut size of child's meals.	0.0	21.3
Q14	Child skipped meals.	0.0	9.0
Q14a	Child skipped meals, 3 or more days.	0.0	5.6
Q15	Child hungry but couldn't afford more food.	0.0	15.7
Q16	Child did not eat for a whole day.	0.0	4.5

Note: *Figures represent households as percent of the relevant food security category.

Table A8: Percentage of Households Classified As Food Secure While Affirming and Classified As Food-Insecure While Denying Individual Survey Items

Q#	Food Security Scale Questions	Classified Food Secure while Affirming (%)*	Classified Food Insecure with Severe Hunger while Denying (%)*
Q2	Worried whether food would run out.	10.9	0
Q3	Food bought just didn't last.	7.1	0
Q4	Couldn't afford to eat balanced meals.	1.6	0.6
Q5	Relied on only a few kinds of low-cost food to feed the children.	4.5	0.6
Q6	Couldn't feed the children a balanced meal.	1.7	0.6
Q7	The children were not eating enough.	1.7	0.6
Q8	Adult(s) in the household cut size of meals or skipped meals.	0.3	0
Q8a	Adult(s) cut or skip meals, 3 or more days.	0.3	0.3
Q9	Ate less than felt he or she should.	0.9	0
Q10	Hungry but didn't eat.	0	0
Q11	Lost weight because there wasn't enough food.	0	0.6
Q12	Adult(s) did not eat for a whole day.	2.5	0.9
Q12a	Adult(s) did not eat for whole day, 3 or more days.	1.2	1.2
Q13	Cut size of child's meals.	1.1	1.7
Q14	Child skipped meals.	0.6	0.6
Q14a	Child skipped meals, 3 or more days.	0	1.5
Q15	Child hungry but couldn't afford more food.	0	0
Q16	Child did not eat for a whole day.	0	2.3

Note: *Figures represent percentages of households who provided responses to the question under consideration.

APPENDIX 2: FOOD - SECURITY/HUNGER CORE MODULE

(in its modified and expanded format). Added questions are shaded gray.

Apartment Number: _____

**FOOD - SECURITY/HUNGER CORE MODULE:
3-STAGE DESIGN, WITH 2 INTERNAL SCREENERS
USDA, Food and Nutrition Service and Economic Research Service - 2000**

Questionnaires Transition into Module - administered to all households: These next questions are about the food eaten in your household in the last 12 months, since (current month) of last year and whether you were able to afford the food you need.

General food sufficiency question/screener: Questions 1, 1a, 1b (OPTIONAL: These questions are NOT used in calculating the food-security/hunger scale). Question 1 may be used as a screener: (a) in conjunction with income as a preliminary screen to reduce respondent burden for higher income households; and/or (b) in conjunction with the 1st-stage internal screen to make that screen "more open" --i.e., provide another route through it.

1. [IF ONE PERSON IN HOUSEHOLD, USE "I" IN PARENTHETICALS, OTHERWISE, USE "WE"].

Which of these statements best describes the food eaten in your household in the last 30 days: - enough of the kinds of food (I/we) want to eat; - enough, but not always the kinds of food (I/we) want; - sometimes not enough to eat; or, - often not enough to eat?

- [1] Enough of the kinds of food we want to eat (SKIP 1a and 1b)
- [2] Enough but not always the kinds of food we want (SKIP 1a)
- [3] Sometimes not enough to eat [SKIP 1b)
- [4] Often not enough (SKIP 1b)
- [] DK or Refused (SKIP 1a and 1b)

- 1a. [IF OPTION 3 OR 4 SELECTED, ASK] Here are some reasons why people don't always have enough to eat. For each one, please tell me if that is a reason why YOU don't always have enough to eat. [READ LIST. MARK ALL THAT APPLY].

- | YES | NO | DK | |
|-----|-----|-----|--|
| [] | [] | [] | Not enough money for food |
| [] | [] | [] | Not enough time for shopping or cooking |
| [] | [] | [] | Too hard to get to the store |
| [] | [] | [] | On a diet |
| [] | [] | [] | No working stove available |
| [] | [] | [] | Not able to cook or eat because of health problems |

- 1b. [IF OPTION 2 SELECTED, ASK] Here are some reasons why people don't always have the quality or variety of food they want. For each one, please tell me if that is a reason why YOU don't always have the kinds of food you want to eat. [READ LIST. MARK ALL THAT APPLY].

YES	NO	DK	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Not enough money for food
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Kinds of food (I/we) want not available
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Not enough time for shopping or cooking
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Too hard to get to the store
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On a special diet

Stage 1: Question 2-6 (asked of all households; begin scale items).

[IF SINGLE ADULT IN HOUSEHOLD, USE "I," "MY," AND "YOU" IN PARENTHEICALS; OTHERWISE, USE "WE," "OUR," AND "YOUR HOUSEHOLD"].

2. Now I'm going to read you several statements that people have made about their food situation. For these statements, please tell me whether the statement was often true, sometimes true, or never true for (you/your household) in the last 30 days, that is, since last (name of current month).

The first statement is "(I/We) worried whether (my/our) food would run out before (I/we) got money to buy more." Was that often true, sometimes true, or never true for (you/your household) in the last 30 days?

- Often true
- Sometimes true
- Never true
- DK or Refused

3. "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more." Was that often, sometimes, or never true for (you/your household) in the last 30 days?

- Often true
- Sometimes true
- Never true
- DK or Refused

4. "(I/we) couldn't afford to eat balanced meals." Was that often, sometimes, or never true for (you/your household) in the last 30 days?

- Often true
- Sometimes true
- Never true

DK or Refused

[IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q5-6; OTHERWISE SKIP TO 1ST-LEVEL SCREEN].

5. "I/we) relied on only a few kinds of low-cost food to feed (my/our) child/the children) because (I was/we were) running out of money to buy food." Was that often, sometimes, or never true for (you/your household) in the last 30 days?

Often true
 Sometimes true
 Never true
 DK or Refused

6. "(I/we) couldn't feed (my/our) child/the children) a balanced meal, because (I/we) couldn't afford that." Was that often, sometimes, or never true for (you/your household) in the last 30 days?

Often true
 Sometimes true
 Never true
 DK or Refused

1st - level Screen (screener for Stage 2): If affirmative response to any one of Questions 2-6 (i.e., "often true" or "sometimes true"), OR, response [3] or [4] to Question 1 (if administered), then continue to Stage 2; otherwise, skip to question 17.

Stage 2: Questions 7-11 (asked of hh's passing the 1st - level Screen: (estimated 40% of hh's < 185% Poverty; 5.5% of hh's > 185% Poverty; 19% of all households).

[IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q7; OTHERWISE SKIP TO Q8]

7. "My/Our child was/The children were) not eating enough because (I/we) just couldn't afford enough food." Was that often, sometimes, or never true for (you/your household) in the last 30 days?

Often true
 Sometimes true
 Never true
 DK or Refused

8. In the last 30 days, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?

Yes
 No (Skip 8a)
 DK (Skip 8a)

8a. [IF YES ABOVE, ASK] In the last 30 days, how many days did this happen?

_____ days.

DK

8b. [IF HAPPENED, ASK] During which week of the previous month did this happen the most- the first two weeks, the 3rd week, the last week of the month?

The first two weeks

The 3rd week

The last week

DK or R

9. In the last 30 days, did you ever eat less than you felt you should because there wasn't enough money to buy food?

Yes

No

DK

10. In the last 30 days, were you ever hungry but didn't eat because you couldn't afford enough food?

Yes

No

DK

10a. [IF OPTION 1 IS SELECTED, ASK] During which week of the previous month did this happen the most- the first two weeks, the 3rd week, the last week of the month?

The first two weeks

The 3rd week

The last week

DK or R

11. In the last 30 days, did you lose weight because you didn't have enough money for food?

Yes

No

DK

2nd - level Screen (screener for Stage 3): If affirmative response to anyone of Questions 7 through 11, then continue to Stage 3; otherwise, skip to 17.

Stage 3: Questions 12-16 (asked of hh's passing the 2nd - level Screen: estimated 7-8% of hh's < 185% Poverty; 1-1.5% of hh's > 185% Poverty; 3-4% of all hh's).

12. In the last 30 days, did (you/you or other adults in your household) ever not eat for a whole day because there wasn't enough money for food?

- Yes
- No (Skip12a)
- DK (Skip 12a)

12a. [IF YES ABOVE, ASK] In the last 30 days, how many days did this happen?

- _____ days.
- DK

12b. [IF HAPPENED, ASK] During which week of the previous month did this happen the most- the first two weeks, the 3rd week, or the last week of the month?

- The first two weeks
- The 3rd week
- The last week
- DK or R

[IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK 13-16; OTHERWISE SKIP TO Q17]

13. The next questions are about children living in the household who are under 18 years old. In the last 30 days, since (current month) of last year, did you ever cut the size of (your child's/any of the children's) meals because there wasn't enough money for food?

- Yes
- No
- DK

14. In the last 30 days, did (CHILD'S NAME/any of the children) ever skip meals because there wasn't enough money for food?

- Yes
- No (Skip 14a)
- DK (Skip 14a)

14a. [IF YES ABOVE, ASK] In the last 30 days, how many days did this happen?

_____ days.

DK

14b. [IF HAPPENED, ASK] During which week of the previous month did this happen the most- the first two weeks, the 3rd week, the last week?

The first two weeks

The 3rd week

The last week

DK or R

15. In the last 30 days, (was the child/were the children) ever hungry but you just couldn't afford more food?

Yes

No

DK

16. In the last 30 days, did (your child/any of the children) ever not eat for a whole day because there wasn't enough money for food?

Yes

No

DK

17. In the last 30 days, what were the sources of your **household income**? [INDICATE ALL THAT APPLY.]

Wage (employment income)

Social Security benefit (SSA)

Child Support (from the other parent)

Pension

Government assistance other than housing

Other: Please specify _____

17a. [IF OPTION 5 IS SELECTED, ASK] What kinds of government assistance did you receive?

- Food stamps
- Supplemental Security Income (SSI)
- TANF (or welfare)
- WIC
- Other: Please specify _____

17b. [IF 17a ANSWERED, ASK] Which week of the month did you receive most of the assistance?

- The first two weeks
- The 3rd week
- The last week
- It varied

18. How often did you do major grocery shopping in the last 30 days?

- Four or more times
- 2-3 times
- Once
- R or DK

18a. [IF OPTION 1 OR 2 IS SELECTED, ASK] Which week(s) of the month did you go for a major grocery shopping in the last 30 days?

- The first two weeks
- The 3rd week
- The last week
- DK or R

18b. [IF OPTION 3 IS SELECTED IN ANSWERING Q# 18, ASK] What was the primary reason why you did only one major grocery shopping in the last 30 days?

- Transportation problem
- Prefer to buy in bulk
- Buy when we receive income, which is once a month
- Other: Please specify _____

19. HOUSEHOLD CHARACTERISTICS

Household Size _____
Number of Children under 18 years old _____
Number of Children under 6 years of age _____
Number of Dependents _____
Age of Household Head _____
Sex of Household Head _____
Family Structure (dual-parent, single-parent household) _____
Number of Adults Employed _____
Household Monthly Income _____