

# Food-Security Status and Food-Purchase Decisions of Low-Income Households in Tennessee

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Food security remains a challenge in the U.S. Andrews et al. (2000) reported that more than 30 million Americans lived in households that were food insecure in 1999. A recent work by Nord, Andrews, and Carlson (2003) indicates that 11.2% of American households were food insecure at least sometime during the year. The authors note that this rate is not statistically different from what was observed for 2002 (11.1%). The percentage of those who are food insecure with hunger remained at 3.5% in 2003. According to Rowley (2000), food insecurity among households in the Southern region has consistently been above the national average since 1995.

Research by Siefert and Corcoran (2000) shows that an inadequate supply of food in households is significantly associated with low energy, and low nutrient intakes having negative impact on health. Work by Godwin, Tegegne, and Speller-Henderson (2003) shows that the dietary status of non-profit food-assistance recipients in Middle Tennessee leaves much to be desired.

A recent study by Leibtag and Kaufinan (2003) examined food purchase behavior of low-income households using national survey data. They note that “households can economize on food spending by purchasing more discounted products, favoring private-label (generic) products over brand, pursuing volume discounts, or settling for a less expensive product” (p. 1). Our study differs from the above study as it examines the issue of food-purchase decisions of low-income households in relation to their food-security status using primary data.

The objectives were to establish the food-security status of the households surveyed; to analyze the relationship between food-security status and food-purchase decisions of the households; and to derive implications for households, food businesses, and policy makers.

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## Data and Methods

Participants were recruited by placing flyers at various places such as neighborhood supermarkets, low-income housing, food pantries and Second Harvest food-distribution centers. An incentive coupon worth \$15, to be used for food purchases, was given to those who participated in the face-to-face interview. A total of 85 people with an income of less than \$25,000 from different racial and age groups were interviewed on the campus of Tennessee State University. The interview lasted approximately thirty minutes and was conducted by personnel with experience in collecting data from this type of population.

The core USDA food-security module with eighteen questions was used to collect the data, and the scoring system that accompanies it was applied to establish the food-security status of the households (Bickel et al. 2000). Data was also collected on the households' demographic and socio-economic characteristics (Table 1). Data on the frequency of shopping practices of households involving various types of foods and issues affecting their purchase decision was also gathered (Table 2). Another set of data collected relates to households' purchase of specified food items during the month before the interview (Table 3). The data was analyzed using SPSS-PC.

## Results

Sixty-five percent of the households were found to be food secure with the balance (35%) being food insecure (Table 1). Females and those between 25 and 50 years of age represented the vast majority of the respondents both in the food secure and food insecure categories. A very high percentage of respondents were black. The survey also shows that the education level of the vast majority of respondents falls in the category of high school and below, and more than 50% of the respondents receive food stamps.

A comparison of the frequency with which the

**Table 1. Demographics of Respondents (%).**

Attribute	Food secure (n=55)	Food insecure (n=30)	Total (n=85)
Gender			
Male	15	30	20
Female	85	70	80
Age			
19–24	9	0	6
25–50	67	73	69
51–70	15	24	18
71 or above	9	3	7
Race <sup>a</sup>			
White	11	37	20
Black	85	57	75
Other	4	6	5
Education completed			
Less than high school	44	23	36
High school or GED	24	43	31
Additional training	23	27	24
College degree	11	7	9
Receive food stamps	58	53	56

<sup>a</sup> Significantly different  $P \leq 0.05$ .

respondents reported various food-shopping practices is summarized in Table 2. Few significant differences were seen between those in the food-secure and food-insecure categories. The food insecure buy store brands more often than do the food secure ( $P \leq 0.05$ ). Moreover, the food insecure also compare price per unit and use bonus cards more often than do the food secure. On the other hand, the food secure more often buy fruits and vegetables at the farmers' market and roadside stands and purchase name-brand cereals than do those who are food insecure. Although not significantly different, it was noted that persons in food-insecure households use shopping lists and plan meals around foods that are on sale, try new recipes, use bonus cards, and eat leftovers more often than do those classified as food secure. Food-secure respondents more frequently throw away food that has spoiled and use coupons.

Specific items purchased by food-secure and food-insecure individuals are shown in Table 3. Again, few significant differences were found be-

tween the groups. More persons within the food-secure category purchased frozen pizza, name brand cereal, head lettuce, and dry noodles/pasta.

### Discussion and Implications

Results of the purchase decisions of the food insecure are largely consistent with what is expected—namely, they use various thrifty measures to economize their financial resources to avoid hunger. Their lack of fruit and vegetable consumption, however, represents a noticeable omission. The results show that food businesses can capture this group of customers by providing price and quantity discounts and by offering store brands for various food products.

The decision to purchase more fruits and vegetables (represented as “head lettuce”) by the food-secure households may reflect their desire to eat healthy and diversify their consumption. Their choice of farmers' markets and roadside stands reflect their preference for fresh produce at a relatively

**Table 2. Food Shopping/Usage Practices of Respondents (%).**

Shopping practice	Food secure (n=55)	Food insecure (n=30)	Total (n=85)
Buy store brands <sup>a</sup>			
Always/often	25	53	35
Sometimes	64	40	35
Rarely/never	11	7	9
Use shopping list			
Always/often	20	33	25
Sometimes	34	37	35
Rarely/never	46	30	40
Plan meals around sale items			
Always/often	14	20	16
Sometimes	44	47	45
Rarely/never	42	33	39
Eat leftovers			
Always/often	47	53	49
Sometimes	44	33	40
Rarely/never	9	13	11
Try new recipes			
Always/often	18	27	21
Sometimes	51	53	52
Rarely/never	31	20	27
Throw away food that spoiled			
Always/often	22	10	18
Sometimes	44	33	40
Rarely/never	34	57	42
Compare price per unit <sup>a</sup>			
Always/often	29	60	40
Sometimes	49	23	40
Rarely/never	22	17	20
Use bonus cards			
Always/often	69	83	74
Sometimes	16	7	13
Rarely/never	15	10	13
Use coupons			
Always/often	34	27	32
Sometimes	29	43	34
Rarely/never	36	30	34
Buy produce at farmer's market <sup>a</sup>			
Always/often	24	3	16
Sometimes	38	43	40
Rarely/never	38	53	44
Purchase through food coop			
Always/often	0	7	2
Sometimes	7	10	8
Rarely/never	93	83	89
Buy foods that are in season			
Always/often	40	37	39
Sometimes	38	43	40
Rarely/never	22	20	21

<sup>a</sup>Significantly different  $P \leq 0.05$ .

**Table 3. Percentage of Respondents Purchasing Specified Food Items in the Previous Month.**

Food item purchased	Food secure (n=55)	Food insecure (n=30)	Total (n=85)
Ground round	51	33	45
Ready-made patties	29	27	28
Chicken parts	76	70	74
Whole chicken	38	27	34
Boneless chicken breast	42	23	35
Chicken nuggets	45	50	47
Chuck roast	40	37	39
Steak	51	30	43
Sliced deli meat	60	57	59
Wrapped hot dogs	27	16	28
Precooked meat	13	23	16
Shrimp	27	10	21
Canned tuna	65	53	61
Frozen pizza	58	33	49 <sup>a</sup>
Pre-peeled potatoes	20	10	16
Bag of whole potatoes	73	60	68
Instant potatoes	49	47	48
Store brand cereal	73	60	68
Name brand cereal	87	53	75 <sup>a</sup>
Refrigerator breads	38	50	42
Dry noodles/pasta	85	67	79 <sup>a</sup>
Toaster pastries/cereal bars	27	23	26
Premium pastries	42	50	45
Frozen dinners	14	7	12
Dried beans	65	53	61
Pre-cut salad	44	37	41
Head lettuce	64	40	55 <sup>a</sup>
Pre-cut fruit/vegetables	42	47	43
Flavored milk	24	37	28
Frozen vegetables with sauce	33	23	29
Asparagus	11	13	12
Premium soups	34	23	30
Lunchables	42	40	41
Meal “kits”	24	20	22
Hamburger helper	47	53	49
Squeezable peanut butter/yogurt	14	20	15
Candy	74	73	73
Pre-sweetened drink mix	40	47	42
100% juice	85	73	81
Bottled water	60	60	60
Juice/drink boxes	51	33	45

low cost compared to supermarkets.

Given that the food secure are also in the low-income category, their purchase decision involving products such as name-brand cereals, canned sodas, and bottled water does not represent optimal use of their limited income. Thus it is necessary to provide training that will promote wiser decisions regarding shopping for food. In addition, there is a need to encourage the food-insecure households to consume fruits and vegetables. Not only will this enhance their nutritional well-being, it will also provide opportunities both for small-business development and a niche market for fruit and vegetable producers. The public sector can also assist by supporting development of farmers' markets. Thus consumers, producers, and food businesses can all benefit from the above changes. The findings of this study are consistent with the national study by Leibtag and Kaufman (2003).

## References

- Andrews, M., M. Nord, G. Bickel, and S. Carlson. 2000. "Household Food Security in the U.S." *Food Assistance and Nutrition Research Report*, Number 8 (FANRR-8), Fall. Food and Rural Economics Division. USDA, Economic Research Service.
- Bickel, G., M. Nord, C. Price, H. Hamilton and J. Cook. 2000. *Guide to Measuring Household Food Security: Revised 2000*, USDA/FNS, Office of Analysis Nutrition and Evaluation.
- Godwin, S., F. Tegegne, and L. Speller-Henderson. 2003. "A Comparison of Household Food Security Status and Dietary Intake of Food Box Recipients in Middle Tennessee." *Journal of Food Distribution Research* 34(1):1-6.
- Leibtag, E. and P. Kaufman. 2003. "Exploring Food Purchase Behavior of Low-Income Households." *Agricultural Information Bulletin No. 747-0*. USDA, Economic Research Service. June.
- Nord, M., M. Andrews, and S. Carlson. 2003. "Household Food Security in the United States, 2003." *Food Assistance and Nutrition Research Report* Number 42. FANRR-42. USDA, Economic Research Service.
- Rowley, T. 2000. "Food assistance Needs of the South's Vulnerable Populations." Southern Rural Development Center, Mississippi State University.
- Siefert, K. and M. Corcoran. 2000. "Food Insecurity and Welfare Reform." In Executive Summaries of 2000 Research Grants, USDA, Economic Research Service.