

Appendix B: Background on the U.S. Food Security Measurement Project

This report of household food security in 1999 is the latest in a series of reports on Measuring Food Security in the United States. The series was inaugurated in September 1997 with the three-volume report *Household Food Security in the United States in 1995* (Hamilton et al., 1997a and 1997b; Price et al., 1997). The advance report of findings for 1995-1998 (Bickel, Carlson, and Nord, 1999) was released in July 1999 and a report detailing hunger and food insecurity prevalence by State for the 1996-98 period (Nord, Jemison, and Bickel, 1999) was released in September 1999.

The estimates contained in all of these reports are based on a direct survey measure developed over several years by the U.S. Food Security Measurement Project, an ongoing collaboration among Federal agencies, academic researchers, and both commercial and nonprofit private organizations (Carlson et al., 1999; Olson, 1999.) The measure was developed in response to the National Nutrition Monitoring and Related Research Act of 1990. The Ten-Year Comprehensive Plan developed under the Act specified the following task:

Recommend a standardized mechanism and instrument(s) for defining and obtaining data on the prevalence of “food insecurity” or “food insufficiency” in the U.S. and methodologies that can be used across the NNMRR Program and at State and local levels.¹

Beginning in 1992, USDA staff reviewed the existing research literature focusing on the conceptual basis for measuring the severity of food insecurity and hunger and on the practical problems of developing a survey instrument feasible for use in sample surveys at national as well as State and local levels.

In January 1994, USDA’s Food and Nutrition Service (FNS) joined with the U.S. Public Health Service, Centers for Disease Control, and Prevention National Center for Health Statistics (NCHS), in sponsoring a

¹Task V-C-2.4, U.S. Department of Health and Human Services and U.S. Department of Agriculture: Ten-Year Comprehensive Plan for the National Nutrition Monitoring and Related Research Program. Federal Register 1993, 58:32 752-806.

national Conference on Food Security Measurement and Research. The conference brought together leading academic experts and other private researchers with key staff of the concerned Federal agencies. The conference identified the consensus existing among researchers in the field as to the strongest conceptual basis for a national measure of food insecurity and hunger and reached working agreement as to the best operational form for implementing such a measure in national surveys (USDA, 1995).

After extensive cognitive assessment, field testing, and analysis by the U.S. Census Bureau, a food security questionnaire was fielded by the Bureau as a Supplement to the Current Population Survey (CPS) of April 1995.² The Food Security Supplement was repeated in September 1996, April 1997, August 1998, and April 1999. Minor modifications to the questionnaire format and screening procedures were made over the first several years and a more substantial revision in screening and format, designed to reduce respondent burden and improve data quality, was introduced with the August 1998 CPS Supplement. However, the content of the “core module” questions upon which the U.S. Food Security Measurement Scale is based has remained constant in all years.

Initial analysis of the 1995 data was undertaken by Abt Associates, Inc., through a cooperative venture with FNS, the interagency working group, and other key researchers involved in developing the questionnaire.

The Abt team used nonlinear factor analysis and other state-of-the-art scaling methods to produce a measurement scale for the severity of deprivation in basic food needs as experienced by U.S. households. Extensive testing was carried out to establish the validity and reliability of the scale and its applicability across vari-

²The Current Population Survey (CPS) is a representative national sample of approximately 50,000 households conducted monthly by the U.S. Census Bureau for the U.S. Department of Labor, Bureau of Labor Statistics. Its primary purpose is to monitor labor force participation and employment in the Nation and each of the 50 States. The CPS also collects specialized supplementary data each month sponsored by various Federal agencies. USDA plans to administer the Food Security Supplement on a regular annual basis, alternating between the April and September CPS.

ous household types in the broad national sample (Hamilton et al., 1997a, 1997b).³

Following collection of the September 1996 and April 1997 CPS food security data, FNS awarded a second research contract to Mathematica Policy Research, Inc. (MPR), to reproduce independently the earlier results obtained from the 1995 CPS data, to estimate hunger and food insecurity prevalence for 1996 and 1997, and to assess the stability and robustness of the measurement model when applied to the separate data sets. The MPR findings, which will be presented in full in a forthcoming final report, establish the stability of the food-security measure over the 1995-97 period. That is, the relative severity of the items was found to be

nearly invariant across years and across major population groups and household types.

In 1998, USDA's Economic Research Service (ERS) assumed sponsorship of the Census Bureau's annual food-security data collection for USDA. ERS has analyzed the 1998 and 1999 data, applying the procedures developed and established for USDA in the Abt and MPR research. The ERS work, which will be presented in a subsequent report, has found continuing stability of the measure in 1998 and 1999.

³The food security scale reported here is based on the Rasch measurement model, an application of maximum likelihood estimation in the family of Item Response Theory models (Wright, 1977, 1983). These statistical measurement models were developed in educational testing, where test items vary systematically in difficulty and the overall score measures the level of difficulty that the tested individual has mastered. In the present application, the severity of food insecurity recently experienced by household members is analogous to the level of test difficulty that an individual has mastered.