

APPENDIX C

ANALYTIC METHODS

This appendix provides descriptions of the analytic methods used to analyze the EFAS Client Survey data. The appendix includes four main sections: (1) a description of the sample weights used in the analysis; (2) a description of sample design effects and estimates of standard errors; (3) a description of the treatment of observations with missing data; and (4) the creation of additional variables for the analysis, including poverty and nutrition program eligibility indicators.

1. Description of Use of Sample Weights

The sample weights used with the data were derived from the weights of the 2000 EFAS Provider Survey (Ohls et al. 2001) with additional adjustments applied as described in Appendix A. In general, all of the statistics in this report were obtained using the sample weights to produce nationally representative estimates of kitchen and pantry clients in the United States.¹ However, unweighted tabulations were also performed in order to obtain sample sizes and compare the findings with those obtained using the sample weights.

2. Design Effects and Estimates of Standard Errors

Because the client survey had a clustered sample design, the true standard errors obtained for various estimates (such as means, and differences of means) will tend to be larger than the standard errors that would be obtained with a simple random sample. The clustering of observations within the primary sampling units (PSUs) included in the survey makes the sample observations more similar to each other than would be the case for a simple random sample. Design effects, equal to the ratio of the estimated variance of a statistic to its variance under the

¹Because providers in Alaska and Hawaii were not included in the study, the client samples are representative of kitchen and pantry clients in the 48 contiguous states and the District of Columbia only.

assumption of a simple random sample, varied considerably for the values generated in the report. The median design effect was 4, and fewer than 5 percent of the design effects were over 10.

The statistical software package Stata, Version 7.0, was used to estimate design effects and standard errors for every analysis in the report. Stata accounts for the clustering of observations within PSUs, but not for the stratification or second-stage sampling of the population, factors that probably have a much more modest effect on standard error estimates. Significance tests were performed using a linear regression model and the Bonferroni adjustment technique (Stata Corporation, pp. 95-101). Initial data preparation was performed using SAS, Version 8.0, while both SAS and Stata were used for data tabulation purposes.

3. Treatment of Observations with Missing Data

Item nonresponse was generally quite low for the EFAS Client Survey. Refusals were usually below 0.1 percent for any single item and reached a maximum of 1.2 percent only for a question regarding monthly income. The proportion of respondents indicating they did not know the answer to a particular question was usually below 1 percent and was never more than 5 percent except for questions related to monthly income (11 percent) and annual income (25 percent).

We addressed missing income data in several ways. A separate question on the survey asked clients whether their monthly income was at or below 130 percent of the poverty level (the gross income limit for participation in the Food Stamp Program). In addition, we inferred a household's low-income status from reported participation of household members in means-tested programs, such as cash welfare (Temporary Assistance for Needy Families (TANF), Social Security Income (SSI), or general assistance), food stamps, WIC, the National School Lunch Program, or the School Breakfast Program. Participation in welfare or food stamps was

assumed to imply income at or below 130 percent of the poverty level at some point during the past 12 months. Participation in the child nutrition programs was assumed to imply income at or below 185 percent of the poverty level at some point during the past 12 months. Taken together, responses to these questions allowed us to place boundaries on household income for most respondents in the survey, such that low-income status (being at or below 185 percent of the poverty level or at or below 130 percent of the poverty level) was known for 96.5 percent of the households in the survey sample.

In general, reported statistics are calculated only for the portion of the sample with nonmissing values of the variable(s) in question. For this reason, the sample sizes used in different tables of the report might not be identical, even when the same population (for example, kitchen clients) is being discussed. Forcing the sample size to be the same for all analyses would tend to reduce the precision of our estimates and would also risk biasing estimates inasmuch as observations with zero item nonresponse might be systematically different from observations with some item nonresponse.

4. Analytic Variables Created

We created numerous analytic variables in order to address research questions regarding EFAS clients. In general, these variables fell into four broad categories: (1) individual demographic characteristics, (2) household demographic characteristics, (3) food security measures, and (4) nutrition program eligibility variables.

Individual Characteristics. We created mutually exclusive categories for race/ethnicity based on respondents' answers to separate questions on Hispanic origin and race: non-Hispanic white, non-Hispanic black, Hispanic, and other. The 'other' category includes racial groups too small to report separately (Asian, American Indian or Alaska Native, and Native Hawaiian or Pacific Islander). Cases reporting Hispanic origin and unknown race were classified as Hispanic.

Household Characteristics. To minimize the interview time required to complete the household roster section of the questionnaire, specific household roster information² was collected for the respondent and up to five additional household members (up to six people total). Responses to Q.D5 “Including yourself, how many people live in your household?” were used to report household size. For households containing more than six individuals (six percent of pantry client households and 2 percent of kitchen client households), we asked whether there were additional members, and, if so, how many were children. If no answer was provided to Q.D5, we imputed household size using information on the respondent’s marital status and the participation of household members in child nutrition programs.

Certain household characteristics were important for the analysis, but could not always be obtained directly from a single survey question. These included the number of children under age 18 in each household and the number of people age 60 or older in each household. Using the information provided in the roster of household members, and additional questions for households larger than six people, we created indicators for the number of children under age 18 and for the number of adults in the household. Respondents’ children with unknown ages were coded as under age 18 if the respondent was age 45 or younger, and respondents’ grandchildren with unknown ages were coded as under age 18 if the respondent was age 65 or younger. In addition, other household members with unknown ages were coded to be under age 18 if no other children were present in the household but the respondent indicated household members had participated in child nutrition programs. Using the household roster information, we also created an indicator for the number of people age 60 or older in the household.

² Household roster information included the respondent’s and household member’s age, gender, and U.S. citizenship, and the household member’s relationship to the respondent.

Food Security. Household food security was assessed using the six-item short form developed by Blumberg et al. (1999). The six-item short form is a subset of the 18-item standard or core set of questions used to track household food security for national health objectives (U.S. Department of Health and Human Services 2000; Bickel et al. 2000). The six-item form was used to classify households into one of three categories: (1) “food secure” (2) “food insecure without hunger” and (3) “food insecure with hunger.”³ Further information on using the short-form food security assessment can be found in USDA’s *Guide to Measuring Household Food Security, Revised 2000* (Bickel et al. 2000).

The client survey also included a seventh question which is also part of the 18-item set (Q. F7: “In the past 12 months, did you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food?” This question has been shown to be a useful indicator to distinguish the severity of food insecurity at the end of the scale associated with hunger (Bickel et al. 2000). Because the prevalence of hunger among EFAS clients was expected to be fairly high, we felt that there was value in asking and reporting the seventh question for this high-risk population.

Food Assistance Program Eligibility. In order to estimate what percentage of respondents’ households were eligible for federal food assistance programs, we created indicators of apparent eligibility for seven programs⁴: (1) the Food Stamp Program (FSP), (2) the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), (3) the National School Lunch

³ The 18-item standard instrument is used to further distinguish moderate and severe hunger within the category “food insecure with hunger”.

⁴ The survey attempted to find out about the direct receipt of government commodities through a question about The Temporary Emergency Food Assistance Program (TEFAP) and the Commodity Supplemental Food Program (CSFP), but because of ambiguity in the question wording, the survey responses to this question are not reported.

Program (NSLP), (4) the School Breakfast Program (SBP), (5) the Summer Food Service Program (SFSP), (6) food through a child care center or Head Start program, and (7) the Nutrition Services Incentive Program (NSIP), formerly the Nutrition Program for the Elderly (NPE).

Households were considered eligible for food stamps if they reported food stamp participation or if they appeared to be low-income, low-resource households. Low-income status was determined either by monthly or annual income at or below 130 percent of the poverty level (see Table C.1 for Fiscal Year 2002 poverty thresholds by household size), or by receipt of cash welfare by household members during the past year. Low-resource status was determined by cash and countable vehicular assets below the FSP thresholds (\$3,000 if the household includes people age 60 or older, and \$2,000 otherwise).

To determine countable vehicular assets, the survey asked clients about the make, model, and year of vehicles for households with more than one vehicle. Food stamp eligibility rules require that vehicles be assessed at their “fair market value,” equal to the wholesale value of the vehicle in excess of \$4,650. Using the Internet (<http://www2.nadaguides.com/>), we obtained retail and wholesale values for as many of the vehicles as possible. Where multiple values were offered for the same make, model, and year, we used the median value. Where the wholesale value was unknown but the retail value was known, we estimated the former as 0.8049944 times the latter. Where neither the wholesale or retail value was known, we imputed it as 0.6394145 times the reported value of the vehicle.⁵

⁵These coefficients were obtained from regressions of the wholesale value on either the retail or reported value of the vehicle. The regressions did not include a constant term because we did not want to assume that a vehicle with zero retail or reported value had a nonzero wholesale value.

A household was considered eligible for WIC if the respondent reported a member receiving WIC benefits during the past year or if the household had income at or below 185 percent of the poverty level and was categorically eligible for benefits. Categorical eligibility was defined as the presence of either a child age 5 or younger or a woman who is pregnant or nursing or who has given birth in the past six months.

A household was considered eligible for NSLP and SBP benefits if the respondent reported a member receiving either benefit during the past year or if the household had income at or below 185 percent of the poverty level and was categorically eligible for benefits. Categorical eligibility was defined as the presence of a child age 5 to 17 in the household or a child under the age of 18 whose precise age was not listed on the roster of household members.

A household was considered eligible for SFSP benefits if the respondent reported a member receiving summer food benefits during the past year or if the household included a child under the age of 18 whose precise age was not listed on the roster of household members.

A household was considered eligible for meals through a child care program or Head Start if the respondent reported the receipt of such benefits during the past year or if the household included a child age 12 or younger or a child under the age of 18 whose precise age was not listed on the roster of household members.

A household was considered eligible for the Nutrition Services Incentive Program (or Nutrition Program for the Elderly) if the respondent reported the receipt of such benefits during the past year or if the household included any member age 60 or older.

TABLE C.1

FY 2002 POVERTY THRESHOLDS, BY HOUSEHOLD SIZE

Household Size	Poverty Threshold
1 person	\$ 716/month
2 people	\$ 968/month
3 people	\$1,220/month
4 people	\$1,471/month
5 people	\$1,723/month
6 people	\$1,975/month
7 people	\$2,226/month
8 people	\$2,478/month
Each additional person	\$ 252/month

NOTE: The FY 2002 monthly poverty thresholds used to determine poverty status are listed in Table C.1 (Federal Register, 3/21/2001, p. 15829).