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Food Insecurity Measures: Experience-Based Versus Nutrition-Based Evidence From India, Bangladesh, and Ethiopia

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What Is the Issue?

Quantitative assessments of food security take a number of different approaches: they may be based on national food availability data, household expenditures, or household food experiences. Two commonly used measures of food insecurity are based on either nutritional adequacy (nutrition-based) or on household perspectives on food security (experience-based or experiential). Like other methods of assessment, these are used by policymakers and the international donor community to develop programs and interventions aimed at the food-insecure and to assess the efficacy of such interventions. However, experience-based measures of food security, created from responses to surveys that elicit the relationship of households and individuals with food security over a period of time, are becoming more popular among both policymakers and researchers. This information is less costly to collect and easier to integrate into existing surveys than nutrition-based measures. Given the role of food security measures in policy development and implementation, it is important to understand how experiential measures compare with other measures of food security in identifying food-insecure households.

What Did the Study Find?

The authors used experiential measures to identify food insecurity in the share of survey households whose reported food intake had identified them as food-insecure according to a benchmark measure of caloric sufficiency. The surveys in Bangladesh and India asked questions that pertain only to the most severe forms of inadequate access to food (e.g., having to skip a meal), while the Ethiopia survey asked a more complete list of questions about household experiences with food insecurity. Comparing nutrition-based (per capita calorie consumption) and experiential measures, the authors found:

- A number of households (between 65 and 83 percent) reporting food intake that identified them as undernourished in calories did not report experiencing food insecurity. This inconsistency occurred in both the survey in Ethiopia that elicited a wide range of food-inadequacy experiences (e.g., worrying about food security) and the surveys eliciting experiences with only the more severe forms of food insecurity, in Bangladesh and India (e.g., skipping meals).

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- Conversely, among households that were classified as adequately nourished in calorie consumption, 34 percent reported experiencing mild food insecurity. However, where the survey questions denoting food insecurity were restricted to experiences that specifically implied a shortage of food (e.g., skipping meals), these households did not report experiencing food insecurity.
- Household per capita expenditure, years of schooling of the household head, household size, and experiencing a shock to household income were all correlated with the likelihood that an undernourished household would not report experiencing food insecurity.
- Differences between the two reported measures—undernourishment and experienced food insecurity—varied substantially across regions. Similar rates of food insecurity between these measures at the national level masked more substantial regional differences in Bangladesh, Ethiopia, and India between the two measures.

The findings suggest that even if the prevalence of food insecurity between experiential and undernourishment responses is similar nationally, experiential measures and caloric consumption benchmarks appear to be classifying different subsets of the population as food-insecure. Most importantly, the measures do not agree on the identity of the households that are most food insecure, the subset households whose consumption most needs to be tracked.

The differences in identifying food-insecure households can be due to a number of factors. These include inaccuracy in reporting household consumption or varying interpretations of the survey questions on which experiential measures are based (such as different expectations about adequate food consumption and societal and cultural norms), as well as differences in survey design such as the period of time for which calorie consumption and food insecurity experiences are reported (7 days, 30 days, or 12 months).

Research is needed to better understand how experience-based measures and reported undernourishment might better align, as well as whether experience-based measures do indeed track the most food-insecure households. These results highlight important limitations to relying on a single measure of food insecurity, given the complexity of measuring food insecurity. But when multiple measures are available, they can be used to complement each other in achieving goals for policy development and program targeting and implementation.

How Was the Study Conducted?

Using data from three household surveys—from Bangladesh, Ethiopia, and India—ERS researchers compared two commonly used measures of food insecurity: a household calorie-consumption measure and a household experiential measure. For each individual household in the three surveys, ERS calculated both daily per capita calorie consumption based on the household's reported food consumption over a given period and an experiential food security perspective. A household with daily per capita calorie consumption below 2,100 calories was classified as food insecure. In the second measure, a single affirmative response to whether the household experienced certain conditions or behaviors due to insufficient food designated a household as food-insecure (experience-based measure). Prevalence rates were calculated nationally, subnationally, and by monthly per capita expenditure. The authors then used nonlinear regression techniques to investigate the association between experienced food insecurity and household food access, measured as the household's daily per capita calorie consumption.