

Natalie Quinn (University of Oxford)

Measuring Consumption in 12 Minutes: Lessons from a Field Experiment in Kenya

Comprehensive household consumption and expenditure modules, such as those included in Living Standards Measurement Surveys and Household Budget Surveys, are the gold standard for evaluating and monitoring monetary poverty in developing countries. The comprehensive nature of these modules entails substantial survey time requirements, limiting both sample size (thus decomposability by population subgroups) and frequency of evaluation. However, much of the data collected through these extensive modules is redundant from an information theory perspective, suggesting that more efficient data collection may be possible.

This paper describes an approach to consumption expenditure measurement implemented in the context of a field experiment in Western Kenya (AEA RCT registrations 996 and 1484). Budget and logistical considerations severely constrained the survey time available to measure consumption expenditure, but the nature of the study meant that it was important to obtain a measure that would be comparable to national and international poverty estimates. Following Beegle et al (2012) and Pape & Mistiaen (2015), but taking a much more light-touch approach to non-core item measurement than that implemented by Pape & Mistiaen, we designed a consumption module with duration just 12 minutes on average across the 10,000 households in the rural study sample. Data from the Kenya Integrated Household Budget Survey (KIHBS) 2005/6 played an important role in the module design.

In this paper I quantify the accuracy of the resulting consumption aggregate and establish its comparability with a consumption aggregate obtained with standard survey instruments. I show that the core food items, captured for all households, constituted 76% of food consumption across the sample, while the core non-durable non-food items constituted 72% of non-durable non-food consumption. I implement and compare different approaches to imputation of non-core consumption expenditure, to determine the optimal imputation approach under two different objectives: 1) minimising bias in the evaluation of individual households' consumption expenditure (appropriate where such methods are used for impact evaluation), and 2) minimising bias in estimates of population distributional parameters, for example the poverty headcount (appropriate where such methods are used for poverty monitoring). I make use of comprehensive data from KIHBS 2005/6 [and 2015/16, if available], as well as simulations, to evaluate the alternative imputation approaches. I show that while comparability at household level is not perfect, it is possible to estimate the poverty headcount at the population level with a very high degree of accuracy.

Implementation of similar methods with representative samples holds promise for 'light-touch' poverty evaluation and monitoring with larger samples and at higher frequency than standard approaches. The necessities of module design and calibration mean that such surveys would be a complement to, rather than replacement for, comprehensive but infrequent measurement of consumption expenditure. One challenge that cannot be addressed within the study sample is heterogeneity of consumption patterns across different geographical areas and other population subgroups. I combine simulations with KIHBS data to propose an efficient response to this challenge, involving stratification at the module design stage.

