

“HARNESSING FOOD DEMAND SYSTEMS FOR IMPROVED NUTRITION IN TANZANIA”

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Abstract

Consumer preferences can be leveraged to magnify the impacts of agricultural investments and interventions on improved diets for all consumers in an economy, not just farmers. Using a holistic approach and nationally representative panel data from Tanzania, we investigate consumers' food choice patterns and the implications for diet quality. We model demand for 19 food groups in Tanzania using LSMS-ISA, a nationally representative household panel dataset using an Exact Affline Stone Index (EASI) demand system (Lewbel and Pendakur 2009), which is flexible in its form, utility theoretic, addresses censoring resulting from a short consumption recall period, and accounts for bias arising because prices and food expenditures are endogenously determined within the demand system (Hausman et al., 1994; LaFrance, 1991). To control for location specific unobserved heterogeneity in consumer preferences, we identify our model using temporal variation in prices within a location. After generating demand system model parameters, we use food composition tables to establish the relationship between income and food price changes and diet quality for African consumers.

We find that consumers' preferences shape their behavior in response to changing prices in sometimes counterintuitive ways. For the poorest consumers, e.g., staple grain prices are a more important determinant of protein and iron intake than are the prices of foods that contain much higher levels of protein and iron. Some of the most pro-poor dietary interventions might involve increasing the affordability of staple foods for poor consumers. We find that, of all foods, maize prices are the most important determinant of dietary energy, protein, iron, and zinc intake for poor consumers. A crop improvement strategy focused on lowering staple grain prices would improve adequacy of dietary energy, protein, iron, and zinc intake for poor consumers. A crop R&D strategy to improve pulse and nut productivity would improve adequacy of dietary energy, protein, iron, zinc, vitamin A, and folate. By contract, a strategy focused on lowering prices of animal sourced foods would improve protein adequacy while worsening adequacy of dietary energy, iron, zinc, vitamin A, and folate.