

Food Demand Project

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March 18, 2025

Motivation & Overview

This project is about understanding people's *choices* about what food to eat (and how much). Sometimes these choices may lead to inexpensive, nutritious diets, but certainly not always!

- ▶ This is a *different* problem than constructing a minimum cost diet.
- ▶ Consumers care about cost, but what they're optimizing is their *utility* from consuming food.

In examining demand, we focus on the relationship between **diet**, **budget**, and **prices**. The overall goal of the project is to be able to give a clear characterization of this relationship for some particular real-world population.

Data requirements

One of the chief challenges of the project is finding adequate data. The data you'll need include:

- ▶ Detailed data on food consumption or expenditures;
- ▶ Data on household or individual characteristics that may influence demand (e.g., household size & composition);
- ▶ A food conversion table, to allow mapping quantities of food into nutritional outcomes.

Deliverables

I'll work through a simple example in class; you can use my code as a prototype.

- A These deliverables are *required*. Note that other deliverables may rely on completion of A deliverables.
- B These deliverables are *very desirable*.
- C These deliverables would be *nice to have*.

(A) Choice of a population, with supporting expenditure data.

This may be the most important decision you have to make. There are lots of different populations that may be interesting, but data exists to support a careful demand analysis only for a few populations. We'll help provide some “curated” datasets you can use, but you're very welcome to also find your own if you wish.

(B) Nutritional content of different foods

For all the foods you're considering you'll need to be able to describe their nutritional content, in terms that allow you to compare with recommended daily allowances. We'll provide pointers to US government recommendations, but many other countries have their own recommendations, which may be better suited to their populations.

(B) Nutritional adequacy of diet

Given the food actually consumed in your data, what can you say about the adequacy of the diets in the population you're studying? What proportion of households consume enough so that members will exceed dietary recommendations? What proportion do not?

(A) Estimate Demand System

Estimate a system of demands for different kinds of food.
Characterize how consumption varies with household need.

(C) Counterfactual Experiments

If everyone's total food expenditures doubled (holding prices fixed) how would this affect nutrition in the population? What if relative food prices changed?

Think of other counterfactual experiments that might be interesting.

(A) Presentation

Each group will be responsible for giving a 15 minute presentation of the work they've accomplished. Be creative! Think of awesome new ways to help others visualize what you've learned.

(A) Code Review

As in the last project, each team will be responsible for providing a code review/replication of the projects of two other teams.