Caroline Beck & Michael Tong

Decision Models

Final Project

“SternEats”

We came up for the idea for SternEats while eating lunch at Saigon Shack and realized that Stern students face the same problem every day: What should I eat in the area for every meal that will accommodate my budget and also give me the nutritional fortification I need for my brain to operate optimally?

Our SternEats model recommends a 4-day meal plan based on an individual’s financial constraints and health profile. The **objective function** specifically was to minimize the **“Anti-Happiness Score”** that will be described in more detail below.

* Financial
  + Constraint #1: Total cost of all meals for 4 days <= [Stern’s annual recommended room & board figure for loans – annual rent + summer internship income] / 365 \* 4
* Nutrition
  + Our calorie calculator takes a person’s gender, age, weight, and activity level and recommends a daily calorie intake
    - Constraint #2: Total calories for the period <= recommended daily calories from the calculator \* 4
    - Initial calorie calculator equations:[[1]](#footnote-1)
      * {Women} 655 + (4.3 x weight in pounds) + (4.7 x height in inches) - (4.7 x age in years)
      * {Men} 66 + (6.3 x weight in pounds) + (12.9 x height in inches) - (6.8 x age in years)
    - Additional calories based on activity level:
      * Initial equation \* 20% if sedentary, 30% if lightly active, 40% if moderately active, 50% if very active, and 60% if extremely active
    - Total daily calories recommended = initial equation + additional activity-related calories
  + We constructed a bank of 50 different meal options between breakfast, lunch, dinner, and beer and mined the prices, added in the tax and/or tip information, and total calories as well as calories from protein, carbohydrates, and fat
    - Each meal’s price + tax + tip contributed to the total cost of meals for the period for Constraint #1
    - Total calories were added and contributed to Constraint #2, and calories from protein/carbs/fat were used for descriptive purposes of the results
* Anti-Happiness Score
  + Anti-Happiness Score = (# of times you go to a restaurant more than once \* 20pts) + 30pts every time you eat at Sosnoff – 30pts if you go to Beer Blast- difference between 4-day financial budget and recommended spend. This assumes:
    - Eating at the same place more than once during the period diminishes the amount of happiness someone gets out of their meal
    - Eating at Sosnoff makes people incredibly unhappy (it does for us!)
    - Going to Beer Blast makes people a lot happier than they would be otherwise
    - Spending less money than necessary makes people happy

1. http://weightloss.about.com/od/eatsmart/a/blcalintake.htm [↑](#footnote-ref-1)