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Is It Worth the Time? Analyzing the Interaction of Money Price , Time Price, and Nutrition Quality

Yanliang Yang¹, George C. Davis¹ and Mary K. Muth²

¹ Virginia Tech, Blacksburg VA 24061

² RTI International, Durham NC 27709-2194

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Introduction

In producing food at home the consumer must navigate the tradeoffs between the price of a recipe, the time required to prepare the food (time price), and the nutritional quality of the food, and perhaps other attributes, such as shelf life.

To reduce preparation time often processed ingredients are utilized as well. The tradeoff between foods prepared from basic ingredients versus processed ingredients is believed to be a tradeoff between their time price and money price. Yet, there is currently a dearth of knowledge on the interaction between food prices, time in food preparation, and nutritional quality.

The SNAP is based solely on the money cost and time cost is neglected. Recent research has shown ignoring time can drastically change the evaluation of the adequacy of SNAP benefits (Davis and You 2010, 2011, 2013).

Objectives

1. To determine the time/price intensity (Gronau and Hamermesh YEAR) for processed recipe versus basic recipe for five food groups (Grains, Protein, Vegetables, Fruits and Dairy)?
2. To estimate the “full price” (money + time) of the MyPlate serving size for 5 food groups and obtain the percentage of the full price attributed to money and time.

Data

Data come from the project “Value Propositions in the Selection of Foods,” a collaboration between the International Life Sciences Institute North America and Research Triangle Institute (RTI). The data contains information on meal price, time price, and nutrients for 143 processed recipes and 100 basic recipes. According to USDA food coding scheme, all foods are categorized into 5 food groups similar with MyPlate (Grains, Protein, Vegetables, Fruits and Dairy).

Results

Table 1. Full Price, Intensity and Ratios

Groups	Recipe Types	Avg. Money Price (\$)	Avg. Preparation Time(mins)	Time/Price Intensity (mins/\$)	Full Price (\$)	Money Price Ratio	Full Price Ratio
Grains	Processed	0.42	0.22	0.53	0.46	1.24	0.50
	Basic	0.34	3.49	10.35	0.92		
Protein	Processed	0.92	0.14	0.16	0.94	1.12	0.69
	Basic	0.82	3.31	4.02	1.37		
Vegetables	Processed	0.27	0.08	0.29	0.28	0.62	0.29
	Basic	0.43	3.30	7.66	0.98		
Fruits	Processed	0.40	0.07	0.17	0.41	0.79	0.50
	Basic	0.51	1.88	3.70	0.82		
Dairy	Processed	0.62	0.68	1.10	0.73	0.93	0.79
	Basic	0.66	1.53	2.31	0.92		
Sub Total	Processed	0.54	0.17	0.31	0.57	1.01	0.54
	Basic	0.53	3.06	5.73	1.05		

Conclusions

- A. For all five food groups, the basic recipe is more time intensive than processed recipe, so consumers with higher time elasticity will try to avoid basic recipe.
- B. If a consumer follows the MyPlate recommendation, for MyPlate based on processed recipe:
 1. Time cost is relatively small comparing with money cost. Full cost is mainly due to the money cost.
 2. Money cost of protein is much larger than other food groups, Money cost of vegetables is the smallest among all food groups.

For MyPlate based on basic recipe:

1. Time cost constitutes 40% of the full cost.
 2. Protein cost most in terms of money cost, but grain and vegetable cost more in terms of time cost. The major parts that added to full cost are protein, grains and vegetables.
- C. In all food groups, the relative full price of processed to basic is always less than simply the money price ratio of processed to basic, suggesting that solely looking at money prices can be very misleading.

Full Price Decomposition

