

YOUNG CONSUMERS' DEMAND FOR NATURAL SWEETENERS

Katrina Krutkramele, Graduate Associate

Mariah Ehmke, PhD, Assistant Professor

Department of Agricultural and Applied Economics
University of Wyoming
1000 E. University Ave. Dept. 3354
Laramie, WY USA 82071
Fax: 307-766-5544
Phone: 307-766-5373

mehmke@uwyo.edu



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Health conscious consumers are increasingly concerned about the caloric content and glycemic index of sweeteners added to food. Currently, the average American consumes 22 teaspoons of added sugar in processed foods per day. Young people typically consume higher amounts of sweeteners via candy, sports drinks, and soda (Smed, Jensen et al. 2007). Recently, the American Heart Association issued a statement recommending no more than six teaspoons for women and nine teaspoons for men of added sugar in processed foods per day (Winslow and Wang 2009). Of particular concern is the glycemic index of sweeteners—or how quickly sweeteners raise one's blood sugar level after consumption. While much of recent concern about added sugar focuses on high fructose corn syrup, other industries, including the honey and beet sugar industries, are likely to be affected by these new recommendations and consumer sentiment.

The objective of this research is to measure young consumers' values of natural sweeteners' glycemic index and to relate this information to their personal risk-preferences and relationships. This research generates needed information for policy regarding refined sugars and natural sweeteners in processed foods. Our primary hypothesis is that the value of natural sweetener alternatives with different glycemic indexes varies with consumers' health consciousness. Further, consumers' valuations are influenced by their own underlying health-risk assessments and social and familial relationships. We hypothesize consumers' economic risk preferences are correlated with their demand for natural sweetener alternatives. We also hypothesize social and family relationships effect the stability of individual preferences for natural sweeteners.

Methods

We used choice and risk preference experiments to measure consumers' valuation of sweetener attributes in food and related these values to individuals' risk preferences, health concerns and health status, marital status, demographic and socioeconomic characteristics, waist circumference measurements, and Body Mass Index (BMI). We collected the data using a choice experiment designed after Lusk and Schroeder (2004) to measure the subject's willingness to pay for natural sweeteners based on the sweetener's glycemic index, price and origin. We used five different oatmeal cookies baked with one of five natural sweeteners: local Honey, non-local Honey, high- fructose corn syrup (HFCS), sugar beet sugar, and agave sweetener. All other ingredients were the same across the cookie selection. There were three price levels: \$2.25, \$3.25 and \$4.25 per half dozen. The subjects received additional glycemic index information for each sweetener. The choice combinations were developed using a fractional factorial design. The experiments were incentive compatible as each subject was required to make a cookie purchase from one randomly selected decision in their experiment choice set.

We adapted a tool from Holt and Laury (2002) to measure each subject's risk aversion. In the experiment, each subject made 10 repeated choices over lotteries with varying degrees of risk. In the first few decisions, the expected payoff was higher for the first option and less risky than the second—there was low downside risk for the first. As the subjects continued through the decisions, the expected payoffs for second option increased with greater certainty. The probability of a higher reward increased so that there is a 100 percent chance of receiving a high reward in the last decision of the experiment. We determined the subject's risk aversion coefficient at the point where they went from choosing the "safer" first option to the second option with more variance in the series of ten choices.

The subjects also completed a survey assessing their general knowledge of food safety risk and nutrition and measured standard socioeconomic and demographic variables. After they completed the survey and experiments, we then measured their weight, height, and waist circumference. This allowed us to correlate their general weight outcome to their demand for natural sweetener alternatives.

Results

Preliminary results show married couples are more risk averse than single couples. Provided glycemic index product information, subjects have the highest demand for cookies made with agave sweetener. The highest demand for agave sweetener is among single people. Preferences for low-glycemic index sweeteners appear to change with marriage. Married people purchased fewer agave cookies and were the only ones expressing preferences for cookies containing high- fructose corn syrup (HFCS) or beet sugar. There was significant demand for honey among both married and single individuals. Risk-averse individuals were more likely to choose cookies sweetened with agave or a local honey.

These results indicate consumers', especially single consumers' demand for sweeteners is influenced by glycemic index information. Also, individuals underlying economic behavior, risk aversion in this case, and relationships affect their food consumption decisions. These results will provide information for conference discussion regarding preference stability; consumer information processing, buying decisions, and willingness-to-pay regarding healthy diets; and the possible welfare effects of sugar taxation. This research is especially relevant to labeling and taxation policy regarding teen and young adult sugar consumption.

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