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Consumer Preferences for Attributes of Organic Processed Foods: The Case of Soymilk In the United States

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United States Department of Agriculture National Institute of Food and Agriculture

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BACKGROUND

- Organic soymilk has been the biggest seller in the organic, non-dairy beverage sector. Recent changes occurring to its market are representative of trends seen in the U.S. organic industry.
- Soymilk is now widely available at traditional supermarkets and mass merchandisers in the U.S. As of 2008, conventional supermarkets became the leading channel for soy-based food and beverage, accounting for 88% of the market share (Mintel 2008).
- Soaring demand for soymilk product attracted various types of retailers to introduce store-brand soymilk products. While store brand soymilk companies introduced organic soymilk products at lower prices, the dominant national brand Silk, which accounts for 75% of the current market share, put in efforts on advertising and marketing soymilk with a focus on improved taste. The effectiveness of these strategies depends on consumer valuations towards these two attributes: taste and price.
- Due to a low adoption rate of organic soybeans by farmers, there is a gap between domestic demand and domestic supply of organic soybeans in the U.S. Feed grain distributors and soy product manufacturers reported sourcing organic soybeans from other countries (Greene et al. 2009). In 2009, the Organic Consumers Association called for a boycott of Silk products because Silk had reportedly sourced organic soybeans from China and Brazil with disputable standards. In response, Silk brand soymilk started to substitute U.S. grown non-genetically modified (GM) soybeans for imported organic soybeans.
- The impacts of these trends on the organic soymilk market are ultimately determined by U.S. consumers' preferences towards organic processed products under different types of brands and production locations of the ingredients.

OBJECTIVE

- Investigate U.S. consumers' perceptions towards soymilk products under different types of brands.
- Examine U.S. consumers' attitudes towards production origins of organic soymilk products.
- Analyze the impacts of imports and different brand marketing strategies on producers, retailers, and consumers in the U.S. organic soymilk industry.

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METHOD

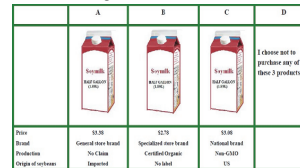
A stated choice method was used to elicit consumer preferences towards various attributes of soymilk products. A national consumer survey was conducted on-line in November, 2010 throughout the U.S., and 316 valid responses were collected.

Experiment Design

Attributes and Attribute Levels in Choice Experiment

Attributes (U.S.)	Levels
Price	\$2.78 \$3.08 \$3.38
Brand	General Store Brand Specialized Store Brand National Brand
Production practice	Certified Organic, Non-GMO, No Claim
Origins of ingredients	U.S., Imported, No label

Example of a Choice Scenario



Estimation method: mixed logit model

$$U_{ij} = \alpha X_{ij} + \mu_i Z_{ij} + \varepsilon_{ij}$$

where X_{ij} is a vector of attributes of alternative j for individual i . μ_i is a vector of random terms with zero mean and Z_{ij} are error components which define the stochastic portion of utility along with ε_{ij} . In the functional form, X_{ij} is defined as:

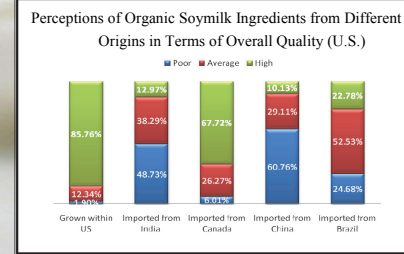
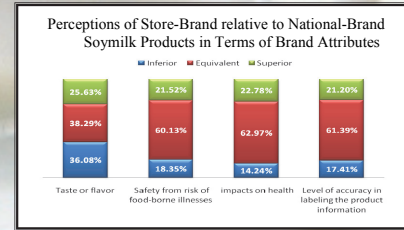
$$X_{ij} = (\text{Price}, \text{Specialized brand}, \text{National brand}, \text{Organic}, \text{Non - GMO}, \text{Grown within U.S.}, \text{Import})$$

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RESULTS & IMPLICATIONS

In the sample, about 62.7% of respondents were male. The majority (60.1%) of respondents were between 35 and 64 years of age. About a third (32.6%) of the respondents earned household annual income above \$100,000, significantly a higher share than the national average, 20.2%.



Estimation Results			
Variables	Coefficient	Std.Err.	WTP ^a
Price	-0.505*** (0.103)		
SSBrand	0.316 (0.678)	2.034*** (0.631)	0.209
NABrand	1.572** (0.696)	2.835*** (0.609)	1.038
ORG	4.643*** (0.818)	0.112 (0.491)	3.065
NGM	1.907** (0.829)	3.334*** (0.909)	1.259
U.S.	1.772 (0.589)	1.508 (0.779)	1.170
IMP	0.312 (0.798)	3.482** (0.734)	0.230

SSBrand: Store brand in health/natural food stores
NABrand: National brand
ORG: Certified organic
NGM: Non-genetically modified
IMP: imported
^aThe estimated willingness to pay has been adjusted by the factor of 3 to account for overestimation in hypothetical experiments (Murphy 2004).

- U.S. respondents showed strong preferences for soymilk made from domestically grown soybeans and were willing to pay more for products using ingredients grown within the U.S. Strong preferences toward soymilk produced from organic soybeans grown domestically imply that appropriate labeling on origins of soybeans may promote sales of organic soymilk made from U.S.-grown organic soybeans.
- The U.S. consumers were willing to pay a premium for soymilk under national brands compared to store brands. Because U.S. respondents differentiated types of brands in terms of taste, marketing strategies of national brand soymilk companies focused on taste improvement will likely to remain effective in securing their market shares, despite challenges with procuring all domestic soybeans to make their organic and alternative products.