U.S. Consumers' Preference and Willingness to Pay for Country-of-Origin-Labeled Beef Steak and Food Safety Enhancements

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Abstract

The mandatory Country of Origin Labeling (COOL) troubles beef exporters to the U.S. due to its trade impeding potential. This study evaluates the perceptions of U.S. consumers on imported steak. Using conjoint analysis, willingness to pay for strip loin steaks from Australia, Canada and the United States are estimated along with several increasingly discussed food safeties and quality attributes. We find that on average U.S. consumers are willing to pay significantly less for imported steaks and positive amount on examined food safety and quality attributes.

Key words: beef, consumer preferences, country-of-origin labeling, conjoint experiment, willingness to pay

Introduction

Beginning from March 2009, Country of Origin Labeling (COOL) provision in Farm Bill 2008 requires most fresh produce and meat sold in retail market are required to be labeled with its country of origin, including beef cuts.

Exporters of beef and cattle to the U.S. are concerned with COOL's effect, fearing that it might add cost in order to comply the requirement, and deter U.S. consumers from consuming imported beef.

Objectives

This research focuses on consumers' reaction to COOL. The objectives are:

1.To examine consumers' perception on safety of imported beef.
2.To elicit consumers' willingness to pay for imported beef steak originated from Canada and Australia in comparison to U.S. origin steak.
3.To estimate consumers' willingness to pay for BSE tested beef, traceability, tenderness guarantee and natural beef.

Data

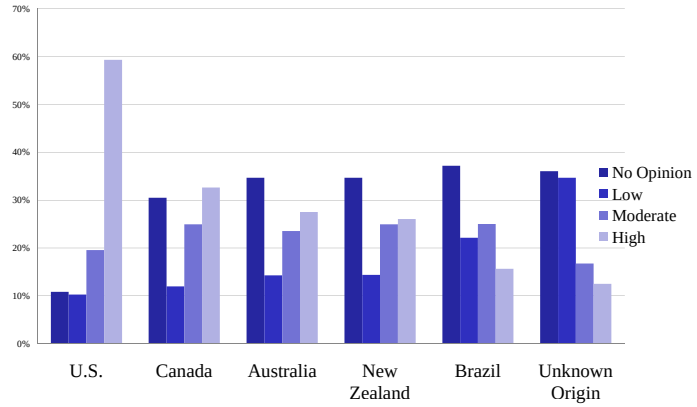
The data was collected through internet survey conducted by TNS Global. In total, 1079 respondents participated.

The sample consists of 52% female, 83% frequent shopper. The mean age is 56, the mean education is 14 years, and the mean income is $52,000. Only 19% of the sample has children living in the household.

The survey has two parts. On the first part, respondents were asked about general food safety questions and to rate safety of imported beef.

On the second part, respondents answered between 10-14 conjoint-type choice sets. In each choice sets they made a choice among 2 alternatives of beef with different attributes and price, or choose not to buy. The data from second part were analyzed with Mixed Logit estimator to elicit willingness to pay.

Perceived Safety Level of Imported Beef



Empirical Model

Consumers' Utility Function

$$U_{ijt} = X_{ijt}\beta + e_{ijt}$$

i- individual j-alternatives t-choice set
U_{ijt} – Utility
X_{ijt} – Matrix of Explanatory Variables
β – Vector of (random and nonrandom) parameters to be estimated
e_{ijt} – Error term, assumed to be iid, extreme value type I distribution

Probability of Choosing Alternative j

$$P_{ijt} = \int \frac{\exp(X_{ijt}\beta)}{\sum_{k=1}^{J}\exp(X_{ikt}\beta)} h(\beta)d(\beta)$$

$h(\beta)$ – joint density function of random parameters β

Results

Variables	Coef. Estimates	Variables	Coef. Estimates
Random Parameters		Standard Deviation	
Chooseno	-1.599***	Chooseno	2.369***
Canada	-1.807***	Canada	0.803***
Australia	-2.852***	Australia	-1.270***
Assured Tender	0.924***	Assured Tender	-0.590***
Traceable	1.269***	Traceable	-0.412***
BSE Tested	1.194***	BSE Tested	-0.469***
Traceable and BSE Tested	1.654***	Traceable and BSE Tested	0.507***
Natural	-0.036	Natural	-0.457***
Non-Random Parameters			
Price	-0.226***		
Canada * Education	0.0866***	Australia * Education	0.119***
Canada * Income	0.000409	Australia * Age	-0.0138***
Canada * Age	-0.0157***	Australia * Income	0.00356
Canada * Male	0.121	Australia * Male	0.151
Canada * Traceable	-0.0639	Australia * Traceable	-0.147
Canada * BSE Tested	0.119	Australia * BSE Tested	-0.155
Canada * BSE_TRC	0.201	Australia * BSE_TRC	0.0759
Canada * Natural	0.128	Australia * Natural	0.0959
* p<0.05, ** p<0.01, *** p<0.001			

Mean Willingness to Pay for Attributes