“CONSUMERS PREFERENCES FOR POTATOES WITH QUALITY ATTRIBUTES IN ARGENTINA”

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Objective

Introduction

Caswell Unified Quality Framework

Data

Results

Consumers’ perceptions about potatoes quality attributes

Empirical analysis based on an Ordered Logit Model

Final Remarks
The aim of this research is twofold:

● To examine consumers’ preferences for potatoes quality attributes.

● To identify those factors associated to purchase of potato of better quality.
It becomes important:

For producers to know which quality cues and attributes are relevant and available to consumers.

From consumers’ perspective, qualities have to be visible and understandable to reduce uncertainty about the products.

to meet consumers’ expectations and preferences
The concept of quality has become crucial in the new approaches of Demand Theory

- Consumers derive utility from goods’ attributes.

- Consumers’ choices are definitely conditioned by the uncertainty they perceive with regard to different qualities offered. (Lancaster, 1966)

- Quality is incorporated as an additional variable in food demand functions. (Antle, 1999)
Caswell et al. (2000, 2002) indicate that food quality attributes can be analyzed along a Unified Quality Framework as it is used as the basis of our empirical work.

Quality perception involves:

1. Cue acquisitions and categorization.
2. Belief formation of quality.
3. Integration of quality attributes and beliefs.

This process is influenced by personal and situational factors.
Quality characteristics related to the purchase of potatoes

<table>
<thead>
<tr>
<th>FOOD SAFETY</th>
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<tbody>
<tr>
<td>Pesticide or drug residues</td>
<td>Intrinsic Quality Attributes</td>
</tr>
<tr>
<td>Food safety / Regulation</td>
<td>Credence Quality Attributes</td>
</tr>
<tr>
<td>Health</td>
<td>Credence Quality Attributes</td>
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<tr>
<td>NUTRITION</td>
<td></td>
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<tr>
<td>Calories</td>
<td>Intrinsic Quality Cues</td>
</tr>
<tr>
<td>Fat content</td>
<td>Intrinsic Quality Cues</td>
</tr>
<tr>
<td>Carbohydrates and fiber content</td>
<td>Intrinsic Quality Cues</td>
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<tr>
<td>Protein content and vitamins</td>
<td>Intrinsic Quality Cues</td>
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<tr>
<td>SENSORY</td>
<td></td>
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<tr>
<td>Colour</td>
<td>Extrinsic Quality Cues</td>
</tr>
<tr>
<td>Appearance</td>
<td>Extrinsic Quality Cues</td>
</tr>
<tr>
<td>Softness</td>
<td>Intrinsic Quality Cues</td>
</tr>
<tr>
<td>Smell</td>
<td>Intrinsic Quality Cues</td>
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<tr>
<td>Freshness</td>
<td>Experience Quality Attributes</td>
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<tr>
<td>Variety</td>
<td>Intrinsic Quality Cues</td>
</tr>
<tr>
<td>Taste/Flavor</td>
<td>Experience Quality Attributes</td>
</tr>
<tr>
<td>VALUE / FUNCTION ATTRIBUTES</td>
<td></td>
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<tr>
<td>-----------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Size</td>
<td>Preparation / Convenience</td>
</tr>
<tr>
<td>Preparatio / Convenience</td>
<td>Packaging</td>
</tr>
<tr>
<td>IMAGE</td>
<td></td>
</tr>
<tr>
<td>Brand</td>
<td>Extrinsic Quality Cues</td>
</tr>
<tr>
<td>Price</td>
<td>Extrinsic Quality Cues</td>
</tr>
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<td>Labels</td>
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<tr>
<td>PROCESS</td>
<td></td>
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<tr>
<td>Local</td>
<td>Credence Quality Attributes</td>
</tr>
<tr>
<td>Integrated pest management potato</td>
<td>Credence Quality Attributes</td>
</tr>
<tr>
<td>Origin</td>
<td>Credence Quality Attributes</td>
</tr>
</tbody>
</table>
Consumer attitudes and perceptions of potato quality attributes were selected from discussions with consumers, producers and retailers’ focus groups. (Rodríguez et al., 2008)

Household Survey
500 randomly selected households
Mar del Plata City-Argentina, June 2009

Questionnaire - face to face interviews -

Socio-economics and demographics factors
(household income and size, employment status, education, age, frequency of potato shopping and consumption, attitudes towards food safety, perceptions of potato quality, willingness-to-purchase)
Results

Consumers’ perceptions about potatoes quality attributes

🗖 35% of the interviewers consume potato at least 1-2 times a week.

🗖 Consumers mainly prioritize:

- Appearance (66%)
- Size (62%)
- Taste / Flavor (48%)
- Skin Color (34%)
- Smell (15%)

🗖 Bad quality of potatoes:

- Scratches
- Bruises
- Sprouted
- Gummy
- Dirty
All the respondents have declared their preferences for buying potatoes at greengroceries and supermarkets shops.

The average score given by consumers to risk in consuming potatoes with pesticide and fertilize content is high (8 points).

A high percentage of households (34%), are willing to pay a 28% more and only 19% of households are willing to pay a 57% more -per kilo of fresh potatoes of better quality-.

Consumers with higher education level are worry about health, food nutritional content and pesticide usage in the production process. Price is not relevant

A great proportion of respondents, who have reached a lower educational level consider that food quality controls are satisfactory.
Empirical Analysis

Ordered Logit Model

Variables

**DEPENDENT VARIABLE** (Ordinal) Consumers’ willingness to buy potato

**Frequency**
0 = less than once a week - 2 times a week (35%); 1 = 3-4 times a week (49%); 2 = 5 and more times a week (16%)

**INDEPENDENT VARIABLES**

Quantitative Explanatory Variables

- **Household size**
  - Average = 3 persons

- **Age**
  - Average = 50 years old

- **Balanced Diet**
  - Average = 7 points

- **Potato Fattening**
  - Average = 5 points

- **Preparation / Convenience**
  - Average = 8 points

- **Price**
  - Average = US dollar 0.46
  - (exchange rate, June 2009, 1 US dollar = 3.80 Argentinean Pesos)

Categorical Explanatory Variables

- **Education**
  - 0 = Modest education (61%); 1 = High education (31%)

- **Size**
  - 0 = No (38%); 1 = Yes (62%)

- **Skin**
  - 0 = No (66%); 1 = Yes (34%)
**Estimation Results for Ordered Logit Model**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>COEFFICIENT SIGNS</th>
<th>STD. ERROR</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>THRESHOLD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FREQUENCY (= 0)*</td>
<td>+</td>
<td>0.690</td>
<td>0.059</td>
</tr>
<tr>
<td>FREQUENCY (= 1)***</td>
<td>+</td>
<td>0.713</td>
<td>0.000</td>
</tr>
<tr>
<td>LOCATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOUSEHOLD SIZE***</td>
<td>+</td>
<td>0.060</td>
<td>0.000</td>
</tr>
<tr>
<td>AGE***</td>
<td>+</td>
<td>0.006</td>
<td>0.010</td>
</tr>
<tr>
<td>BALANCED DIET***</td>
<td>+</td>
<td>0.036</td>
<td>0.009</td>
</tr>
<tr>
<td>POTATO FATTENING*</td>
<td>-</td>
<td>0.026</td>
<td>0.060</td>
</tr>
<tr>
<td>PREPARATION / CONVENIENCE**</td>
<td>+</td>
<td>0.040</td>
<td>0.034</td>
</tr>
<tr>
<td>PRICE*</td>
<td>-</td>
<td>0.175</td>
<td>0.003</td>
</tr>
<tr>
<td>EDUCATION (= 0)**</td>
<td>+</td>
<td>0.217</td>
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<tr>
<td>EDUCATION (= 1)</td>
<td>0^a</td>
<td></td>
<td></td>
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<tr>
<td>SIZE (= 0)**</td>
<td>-</td>
<td>0.190</td>
<td>0.017</td>
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<tr>
<td>SIZE (= 1)</td>
<td>0^a</td>
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<tr>
<td>SKIN COLOUR (= 0)**</td>
<td>-</td>
<td>0.195</td>
<td>0.030</td>
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<tr>
<td>SKIN COLOUR (= 1)</td>
<td>0^a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance level: ***p<0.01; **p<0.05; *p<0.10

a: this parameter is redundant

n = 471 households

Link function: logit

The model fits adequately.
The signs of coefficients are all as we expected, and they are suggesting that...

- ... household with high number of members have a higher probability to consume fresh potato more frequently.
  
  (HOUSEHOLD SIZE)

- ... older respondents consume more frequently fresh potatoes than younger respondents.
  
  (AGE)

- ... households considering potato as a relevant food for a balanced diet are likely to consume more frequently fresh potato.
  
  (BALANCED DIET)

- ... there is an inverse relationship between frequency of consumption and the belief that potato helps to get fat.
  
  (POTATO FATTENING)
Those consumers considering potato as 'a food easy to prepare meals and also easy to clean' have a higher probability of consuming this good more frequently.

(PREPARATION / CONVENIENCE)

Households paying higher average potatoes prices are likely to consume fresh potato less frequently.

(PRICE)

Low educated consumers have a higher probability to buy fresh potatoes more frequently.

(EDUCATION)

Those who do not care about potato size and skin colour have a low probability to consume fresh potatoes more frequently.

(SIZE and SKIN COLOUR)
Final Remarks

- Consumers want to meet their expectation for size, colour, texture, and nutritional value, when purchasing potatoes.

- In Argentina, there is a little consumer recognition of potato varieties and their culinary uses. This lack of information creates an excellent opportunity for market niche developing.

- Producers and stakeholders should give to consumers something to look for and tell them they have made the right decisions.

- Information provided in food labels is an instrument to improve consumers’ perception of potato quality and also inform to those consumers that are willing to buy and pay a price premium for this product.
Thanks for your attention!!!

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