Evaluation of the Effects of Changes in Regulatory Policies on Consumers Perception

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Changes in regulatory systems produce effects on enterprise competitiveness

- On the cost side
  - i.e. Oenological practices restriction, designation of origin product specifications
- On the incomes side
  - Product differentiation and positioning on higher added value market segments

Different aspects connected with regulations can influence consumers quality perception and the value that consumers attribute to the products.
• Provisions on wine labelling and presentation <=> rules on production methods
  – Health concerns, origin, quality
• The Wine CMO contains mainly regulatory measures
  – Title III: oenological practices and restrictions, designations of origin and geographical indications, traditional terms, labelling and presentation, producer and inter-branch organisations
Title V: unlawful plantings, transitional planting right regime
The consumer choice in wine sector

- Consumers mainly choose on the basis of extrinsic cues (quality signals)
- Variables usually considered:
  - Packaging (bottle colour and shape, label, etc.)
  - Brand name (producer, geographical indication)
  - Information about wine characteristics (variety, region of origin, vintage)
  - Price

- But there are other characteristics linked with regulation (and labelling)
PDO Wines labelling and presentation

- Compulsory particulars (reg. EC No 607/09)
  - i.e. “contains sulphites”
- Optional particulars
  - Unit smaller or larger than the PDO area
  - Production methods
  - PDO and PGI symbols
  - Producing and bottling in the enterprise
  - Terms referring to a holding
  - Additional producers organisation brands
- EU Organic legislation (Council regulation (EC) No 834/2007)
Objective of the research

• Analysing consumers quality perception and the value they attribute to the product

• Consumers evaluate the product as a whole
  – To consider the combination of different characteristics of the product
  – To determine the contribution of each factor to the creation of value for consumers

• Experimental economic analysis using Conjoint Analysis
  – Evaluate how regulations and provisions in wine labelling can affect consumers quality perception
Conjoint Analysis

- It assumes that consumers may be able to evaluate a range of products along some key dimensions (attributes)
- Different series of product profiles
  - Different combination of information on wine labels and prices (scenarios)
  - Estimate the importance of each attribute of the plan
  - The utility function consists of part-worth estimate for each level of the attribute
Conjoint Analysis

- Full profile method
  - Complete products are presented to consumers (with all the attributes)
  - In each profile all the factors are present, although with different combinations of levels and attributes
  - Consumers classify each profile with a criterion of preference (liking, purchase intention, etc.)
  - Presentation of a reduced plan of profiles (balanced)
  - Score method: evaluate each profile with a score between 1 and 100
Research design

• Questionnaire
  – Personal information, attitude in wine consumption, wine sector knowledge
  – Profiles to evaluate (8 labels of a designation of origin Montepulciano d’Abruzzo DOC wine)

  – More than two hundred wine consumers in the Abruzzi region
  – Another sample in Brazil, Santa Catarina State (first results)
## Results: relative importance of the factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Level</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consortium</td>
<td>(= Associated or not to “Consorzio di Tutela Vini d’Abruzzo”)</td>
<td>18.399</td>
</tr>
<tr>
<td>Sulphites</td>
<td>(= Contains sulphites or not)</td>
<td>9.583</td>
</tr>
<tr>
<td>Bottling place</td>
<td>(= The wine is bottled in the production enterprise or in other enterprise)</td>
<td>27.591</td>
</tr>
<tr>
<td>Organic certification</td>
<td>(= Organic certification or not)</td>
<td>11.968</td>
</tr>
<tr>
<td>Price range</td>
<td>(= The four different price ranges used in the experiment)</td>
<td>32.459</td>
</tr>
</tbody>
</table>
## Estimate of the factors utility value

<table>
<thead>
<tr>
<th>Factor</th>
<th>Level</th>
<th>Utility value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consortium</td>
<td>Associated</td>
<td>3.355</td>
</tr>
<tr>
<td></td>
<td>Not associated</td>
<td>-3.355</td>
</tr>
<tr>
<td>Sulphites</td>
<td>It contains sulphites</td>
<td>-1.748</td>
</tr>
<tr>
<td></td>
<td>It does not contain sulphites</td>
<td>1.748</td>
</tr>
<tr>
<td>Bottling place</td>
<td>In the enterprise</td>
<td>5.031</td>
</tr>
<tr>
<td></td>
<td>In other enterprise</td>
<td>-5.031</td>
</tr>
<tr>
<td>Organic certification</td>
<td>Certificated</td>
<td>2.182</td>
</tr>
<tr>
<td></td>
<td>Not certificated</td>
<td>-2.182</td>
</tr>
<tr>
<td>Price range</td>
<td>From 3 to 5 euros</td>
<td>3.289</td>
</tr>
<tr>
<td></td>
<td>From 5 to 7 euros</td>
<td>5.076</td>
</tr>
<tr>
<td></td>
<td>From 7 to 14 euros</td>
<td>-1.603</td>
</tr>
<tr>
<td></td>
<td>From 14 to 25 euros</td>
<td>-6.762</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>48.856</td>
</tr>
</tbody>
</table>

R of Pearson – Value 1.000

Tau of – Value 1.000
Further characteristics

• The relative importance of the factors differs for
  – Age
  – Gender
  – Frequency of wine consumption

• The change in regulation about designations of origin (in Italy to DOC to PDO) isn’t known
  – 49% DOC better than PDO
  – 32% PDO better than DOC
  – 19% no differences between DOC and PDO wines
The Brazilian wine consumers sample

• Brazil: new consumer country, but...
  – Presence of Montepulciano d’Abruzzo DOC in many retail selling points
  – Presence of a big Italian community in Santa Catarina state

• Price is by far (by 50%) the variable with greatest impact
• Sulphite content is the second most important (28%)
• Little attention paid to organic certification of the grapes
• Irrelevant the membership to Abruzzi Wine Consortium
Market segmentation (factor analysis and cluster analysis)

- Analysis of the main components of the consumers characteristics through a factor analysis

<table>
<thead>
<tr>
<th>Component</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total: 2.842, % of Variance: 20.303, Cumulative %: 20.303</td>
</tr>
<tr>
<td>2</td>
<td>Total: 2.520, % of Variance: 18.001, Cumulative %: 38.304</td>
</tr>
<tr>
<td>3</td>
<td>Total: 1.754, % of Variance: 12.531, Cumulative %: 50.835</td>
</tr>
<tr>
<td>4</td>
<td>Total: 1.355, % of Variance: 9.675, Cumulative %: 60.510</td>
</tr>
<tr>
<td>5</td>
<td>Total: 1.098, % of Variance: 7.845, Cumulative %: 68.356</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis
Five components, that explain more than 68% of the total variance, are correlated to:

- young people with low product cognition
- women available to pay for quality
- young women with low product cognition
- mature and traditional women
- men looking for price-quality relationship

The factorial coefficient of the five components have been used to identify clusters of performing customers.
Table 10: Cluster Analysis

Average of the gender variable in the 5 cluster

<table>
<thead>
<tr>
<th>cluster</th>
<th>n. of cases</th>
<th>Women (%)</th>
<th>Men (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35</td>
<td>25.7</td>
<td>74.3</td>
</tr>
<tr>
<td>2</td>
<td>83</td>
<td>61.4</td>
<td>38.6</td>
</tr>
<tr>
<td>3</td>
<td>42</td>
<td>52.4</td>
<td>47.6</td>
</tr>
<tr>
<td>4</td>
<td>46</td>
<td>26.1</td>
<td>73.9</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>207</td>
<td>45.4</td>
<td>54.6</td>
</tr>
</tbody>
</table>

Source: own elaboration
Table 12: Cluster Analysis
Average of the identification of DOC and DOP as a quality indicators

<table>
<thead>
<tr>
<th>cluster</th>
<th>n. of cases</th>
<th>DOC (%)</th>
<th>DOP (%)</th>
<th>No difference (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35</td>
<td>60.0</td>
<td>34.3</td>
<td>5.7</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>83</td>
<td>56.6</td>
<td>39.8</td>
<td>3.6</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>42</td>
<td>81.0</td>
<td>16.7</td>
<td>2.4</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>46</td>
<td>0.0</td>
<td>30.4</td>
<td>69.6</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>0.0</td>
<td>0.0</td>
<td>100.0</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>207</td>
<td>49.3</td>
<td>31.9</td>
<td>18.8</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: own elaboration
Results of Cluster Analysis

• **First segment (35 elements):** mainly young men, with a good product cognition; their wine purchases are characterized by an average frequency, and the wine consumption take place mainly at the restaurant; they identify the DOC mark (60,00%) more times than the PDO one (34,29%), as a quality indicator; in this segment we can verify a remarkable preference for the wine profiles 3 and 4;

• **Second segment (83 subjects):** mainly young women, with a sufficient product cognition; their wine purchases are characterized by lower frequency than the average; they buy wine above all from the producer or at the restaurant; they identify the DOC mark (56,63%) more times than the PDO one (39,76%), as a quality indicator; the wine profiles 1 e 7 are the most preferred in this segment;
Results of Cluster Analysis

• **Third segment (42 subjects):** medium age subjects, not differentiated by gender, with little more than sufficient product cognition; their wine purchases are characterized by an average frequency; they buy wine above all from the producer or at the restaurant; they identify the DOC mark more times than the PDO one, as a quality indicator; the wine profiles 1 e 7 are the most preferred in this segment;

• **Fourth segment (46 subjects):** medium age male subjects, with little more than sufficient product cognition; their wine purchases are characterized by an average frequency; they buy wine above all from the producer; almost 70% of the subjects of this segment correctly identify both the DOC and PDO marks as quality indicators; the wine profiles 1 e 3 are the most preferred in this segment;

• **Fifth segment (1 subject):** not considered
Conclusive remarks

- Aspects of wine labelling and presentation directly linked with regulatory policies strongly affect consumer perception
  - Aspects of naturality, quality control, safety
- These are elements of further differentiation within the designation of origin wines category
- It is possible to identify different segments characterized by
  - their acceptance or rejection of product attributes
  - their cognition of new designations of origin in the CMO (in Italy from DOC to PDO)
  - their demographic and consumption habits
- Changes in regulation affect enterprise competitiveness: new rules have to be analysed also in this point of view
Conclusive remarks

• The differentiated attribution of quality to brand DOC rather than to the PDO put in evidence for EU policy makers the need to inform the European wine consumers in a more efficient way, considering that only about 19% of the sample, clustered into segment n. 5, gave the correct answer about these quality indicators.

• Labelling designation of origin wines with different indications (PDO and/or DOC) and using the Community PDO Logo can increase confusion in the consumers.

• There are interesting similarities and differences between Italian and Brazilian consumers: importance of further differentiation in the denomination of origin category also in the Brazilian market.
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Thank you!