An Attempt of Estimating Hedonic Price for Italian Vinegars

GALLETTO Luigi, ROSSETTO Luca

University of Padova, IT
luigi.galletto@unipd.it, luca.rossetto@unipd.it

Vinegar, although derived from wine by mean acetic fermentation, is not a beverage but a dressing, the second dressing in Italy after olive oil, with an increasing relevance in the world market (Berry, 2011).

The vinegar market characteristics have received modest attention by researchers and the few studies (e.g. Mattia, 2004; Radman et al., 2005) concern mostly particular vinegars and deal scarcely with the price issue.

A preliminary literature survey indicates that hedonic price analysis, which has been widely used for wines, beers and other beverages food products (Nerlove 1995; Landon and Smith 1997; Combris et al. 2000; Angulo et. al., 2000; Schamel and Anderson 2003; Lecocq and Visser, 2006; Couto and Rodrigues, 2007; Almenberg J. and Dreber A., 2011), seems to be never applied to vinegar.

Therefore, we have undertaken a first attempt to investigate the most important features influencing the vinegar price, by means of a survey on a sample of Italian large scale retail (LSR) outlets (hypermarkets, supermarkets and minimarkets).

Data collection has been carried out in 46 sale points of different size, belonging to 27 different LSR labels, which are located 21 towns of the Verona province (Western Veneto) and it took place between July and November 2012. In each store we completed a questionnaire section for each commercial reference, which includes the following bottle related features: a) geographic indication, b) type of vinegar, c) size, d) type of cap, e) glass color, f) presence of back label, g) producer’s brand, h) acidity level (acetic acid percentage), i) price per bottle, j) price policy, k) discount percentage. Moreover we included two other merchandising characteristics: a) display level and b) facing (no. of bottles on the shelf). The reference sample totalsize 1036 vinegar bottles, belonging to 113 different brands. Such a number of brands on the market show a highly differentiated market, due to an arena made up by few big producers who compete with of many other of small size. As dependent variable we use the natural logarithm of price per liter. Estimation was performed by using both enter and stepwise methods.

The best model selecting the most significant variables with the stepwise method is reported in the three lines below. The name of the independent variables (ranked in decreasing order, according to the standardized beta values) is followed by the coefficient and its standard error.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSR chain</td>
<td>-0.14</td>
<td>0.115</td>
</tr>
<tr>
<td>Eye level</td>
<td>0.115</td>
<td>0.057</td>
</tr>
<tr>
<td>Ponti brand</td>
<td>Adj. R squared 0.466</td>
<td></td>
</tr>
</tbody>
</table>

An additional model, taking into account some interactions between couple of variables increases the Adj. R squared to 0.50.

Estimations show a high contribution of point of sale features to vinegar price. Adding another bottle in the shelf reduces price by 7.4%, and locating it at the foot level implies a 36% decrease in comparison with the hand level, while setting it at the eye level result in a 11.5 increase. Furthermore, bottles that are sold in outlets owned by the main local LSR chain are priced 14% less than those that are sold in the other outlets.
Among the bottle related features, size ranks first: each additional centiliter decreases price by 1.1%. Also the type of cap is quite important. In fact, we have found that the mushroom-shaped cork cap increases price increases by 51.4%, and the spray type by 66.8% in comparison with the screw cap (no matter if made by plastic or metal). Both the two particular cap types close only Balsamic vinegar bottles, and therefore the difference in price is not attributed only to the type of cork, but also to the type of vinegar. Another feature which tends to decrease the price is acidity. In fact, augmenting the acetic acid concentration of one degree leads to a 20.5% decreases in the vinegar price.

The model likely underestimates the effect of the producer’s brand on price variability, due to the presence of too many small size firms. We have tested the eight more represented brands by means of dichotomous variables, but only Fini and Sasso outstand significantly among the others brands.

Unexplained price variability seems to be related to local pricing policies from both vinegar producers and outlets. Moreover, the effect of some attributes, as back label, geographic indication and type of vinegar seem to be, at least partially, “captured” by the type of cap.

Keywords: vinegar, hedonic price, brand, point of sale

JEL-Code: M31

References


