An estimation of reputations’ interactions in the case of Washington State Wines

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The story

Membership in the Washington Wine Commission is voluntary with wineries and growers assessed membership fees based on gallons produced and tons per acre. In 2007, the Commission tripled its fees to members:
- from $4.00 per gallon produced to $12 per gallon,
- from $2.00 per ton to $6.00 per ton of grapes harvested.

With this additional funding the commission did aggressive campaign promoting Washington wines in Florida State and in 2008, the plan is to target the state of Texas.

Does it really make sense to become a member of the Washington Wine Commission?

Outline

1) Introduction
2) Individual vs. collective reputation
3) Washington state wines & data
4) Empirical results

1) Introduction

To what extent do individual reputations explain and are explained by collective reputation?

► How do individual and collective reputations interact?
1) Introduction

- A researcher with his/her laboratory or university
- A scientific article with its academic journal
- A sportsman/woman with his/her team
- A product with its brand
- ...
- A wine producer with his vineyard
- An appellation with a larger region/state/country

How does the Washington State Wine collective reputation determine the reputations of individual AVAs within Washington State?

What is the contribution of each individual AVA reputation to the collective reputation of Washington State?

2) Individual vs. collective reputation

- At any point in time each consumer has some expectations regarding product quality. These expectations constitute the firm’s reputation » Shapiro (1982, p. 21)
- A firm has a good reputation if consumers believe its product to be of high quality » Shapiro (1983, p. 659)
- The term ‘reputation’ expresses what is generally said or believed about the abilities and/or qualities of somebody or something » Belletti (2000, p. 225)
- Beliefs of other people, opinion, perception
- Complex goods & information asymmetry

- Reputation
  - of someone (related to his behaviour),
  - of something (a product, a brand: related to its quality)
  Individual reputation

- Reputation of a group of people, of a group of things (collective brand)
  Collective reputation
2) Individual vs. collective reputation

Related literature
- Collective reputation theory
  Tirole (1996)
- Umbrella branding theory
  Sullivan (1990); Choi et al. (1995); Andersson (2002); Cabral (2000)
- Brand extension theory
  Wernerfelt (1988)

2) Individual vs. collective reputation

Intensity of the interaction?
- Same impact? Same contribution?

- Bordeaux wines
  - Impact of the collective brand “Bordeaux” on individual appellations
  - Only the most reputed appellations benefit from the reputation of Bordeaux

Winfree and McCluskey (2005): Washington State apples
- Incentives for individual apple producers to produce a consistently high-quality product are not aligned with the goals of the collective group

3) Washington State wines & data

- 500 wineries, up from 19 in 1981
- 30,000 acres (12,145 ha), 350 growers
- 68.3 million litres annual production
- 14,000 jobs
- Economic Impact: $3 billion
AVAs used in study: Columbia Valley, Yakima Valley, Walla Walla Valley, Red Mountain

A linear static simultaneous system:

\[
\begin{align*}
WS &= \alpha_1 CV + \alpha_2 YV + \alpha_3 WWV + \alpha_4 RM + \beta X_1 + \epsilon_1 \\
CV &= \gamma_1 WS + \delta X_2 + \epsilon_2 \\
YV &= \gamma_2 WS + \eta X_3 + \epsilon_3 \\
WWV &= \gamma_3 WS + \theta X_4 + \epsilon_4 \\
RM &= \gamma_4 WS + \rho X_5 + \epsilon_5
\end{align*}
\]

- \(\alpha_i\) (i=1,…,4): contribution of every individual reputation to the collective reputation
- \(\gamma_i\) (i=1,…,4): impact of the collective reputation on each individual reputation
- \(X_i\) (i=1,…,5): vector of exogenous variables
- \(\epsilon_i\) (i=1,…,5): error term

3) Washington State wines & data

- Enological Societies indicating an interest in wine
- Online survey, October-December 2007
  - 476 individuals
  - Median age: 48.1 years
  - Approximately equal % male/female
  - Bachelor’s Degree
  - Household income above $100,000 (32.3%)
  - Consumption: More than 3x/week
  - Predominately red wine
- Perceived quality: Measured on Likert Scale 1 (lowest) – 5 (highest)

Empirical strategy:
- 3SLS estimation (Zellner and Theil, 1962)
- Nb. of endogenous variables = nb. of equations
- Stata software

Different sub-samples & empirical models:
- With Socio-Economic Factors
- Without Socio-Economic Factors
- Connoisseur vs. Non-Connoisseur
4) Empirical results

**Table 1: Level of reputation**

<table>
<thead>
<tr>
<th>Wine Region</th>
<th>Number of useful observations*</th>
<th>Average quality grade</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington State</td>
<td>431</td>
<td>4.079</td>
<td>0.757</td>
</tr>
<tr>
<td>Columbia Valley</td>
<td>433</td>
<td>4.085</td>
<td>0.733</td>
</tr>
<tr>
<td>Yakima Valley</td>
<td>398</td>
<td>3.899</td>
<td>0.812</td>
</tr>
<tr>
<td>Walla Walla Valley</td>
<td>387</td>
<td>4.406</td>
<td>0.733</td>
</tr>
<tr>
<td>Red Mountain</td>
<td>314</td>
<td>4.519</td>
<td>0.698</td>
</tr>
</tbody>
</table>

* less than the sample because some did not answer or marked unsure.

**Table 2: Correlation Coefficient between quality grades**

<table>
<thead>
<tr>
<th>Correlation Coefficient</th>
<th>Individual reputation (Average grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington State and Columbia Valley</td>
<td>0.6416*</td>
</tr>
<tr>
<td>Washington State and Yakima Valley</td>
<td>0.5863*</td>
</tr>
<tr>
<td>Washington State and Walla Walla Valley</td>
<td>0.3744*</td>
</tr>
<tr>
<td>Washington State and Red Mountain</td>
<td>0.1*</td>
</tr>
</tbody>
</table>

*Significant at both 5% and 1%

The lower the AVA’s average grade, the stronger the link between individual reputation and collective reputation.

**Table 3: Estimation results**

<table>
<thead>
<tr>
<th>RHS variable</th>
<th>Collective rep. equation</th>
<th>Individual reputation equations</th>
<th>Coef.</th>
<th>z-stat</th>
<th>Coef.</th>
<th>z-stat</th>
<th>Coef.</th>
<th>z-stat</th>
<th>Coef.</th>
<th>z-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington State</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
<td>.782*</td>
<td>9.84</td>
<td>.717*</td>
<td>7.90</td>
<td>.394*</td>
<td>4.38</td>
</tr>
<tr>
<td>Yakima Valley</td>
<td>3.19</td>
<td></td>
<td>3.19</td>
<td>3.15</td>
<td>.371</td>
<td>3.57</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walla Walla Valley</td>
<td>.066</td>
<td></td>
<td>.066</td>
<td>.034</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Mountain</td>
<td>.002</td>
<td></td>
<td>.002</td>
<td>.034</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nb. of obs.</td>
<td>295</td>
<td></td>
<td>295</td>
<td>295</td>
<td>295</td>
<td>295</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>506</td>
<td></td>
<td>.435</td>
<td>.447</td>
<td>.351</td>
<td>.293</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at 5%

Each of 4 AVA’s derives a positive benefit from the collective reputation of Washington State, but on a different level.

The less reputable the individual AVA, the more benefit it derives from the reputation of Washington State.

The most reputed AVA’s benefit from a significant but low impact and do not contribute to the collective reputation.

No systematic interaction between collective and individual reputations.
Conclusions & implications

- Inverse relationship between the level of individual reputation and the link with collective reputation
- The lower level of individual reputation, the more intense the link with the group reputation
- Opposite result for Bordeaux wines
- Need a theoretical framework to explain the intensity of the relationship

Conclusions & implications

- AVA Associations
  - Walla Walla: very active, strong alliance (high reputation)
  - Red Mountain: nascent stages (high reputation)
  - Yakima Valley: fragmentation (low reputation)
  - Columbia Valley: no activity (average reputation)
- Washington Wine Commission
  - Voluntary membership
  - Can assist Columbia Valley and Yakima Valley
- Individual Producers
  - Often cannot put AVA on label each year

Thank you for your attention

Questions, critics, comments:
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