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Wine Industry Competitiveness: A survey of the Shawnee Hills American Viticultural Area

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Abstract

There is a growing consumer preference for regional or "terroir" based products (Guy 2011). The designation of American Viticultural Area (AVA) status has the potential to increase the development of consumer identification with regional wine products. The presence of a distinguishing terroir is one of the prerequisites for the establishment of a federally recognized AVA. The Tobacco Tax and Trade Bureau (TTB) granted the Shawnee Hills, located in southern Illinois, this designation at their request in 2006 (MKF 2005).

The goal of the present research is to determine the key factors enhancing or constraining the competitive performance of wine businesses in the Shawnee Hills AVA. A winery competitiveness survey was administered to all owner/operators in the Shawnee Hills to determine whether the infrastructure was in place to sustain a regional wine quality program. The specific aim of this survey was to understand key factors influencing the competitive performance of wine businesses in the Shawnee Hills AVA.

Shawnee Hill's AVA winery owner/operators regard increases in regional tourism, growth in the US wine market continuous innovation, unique services and processes, and flow of information from customers to have the most enhancing effects on their businesses, and that confidence/trust in Illinois state political systems, tax systems, and administrative/bureaucratic regulations were the most constraining factors. Furthermore the Shawnee Hills AVA has growing competition, yet consists of innovative winery owners. It may currently lack external financial support, but with a community focus on product differentiation, the Shawnee Hills AVA has a chance, owners believe, to capture a portion of the growing market for regional products.

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Introduction

Wine production in the US has increased to just under 900 million gallons a year (Wine Institute 2015). Even though California still produces over 90 percent of that wine other regions have begun to develop their own unique wines and wine culture. In Illinois the number of wineries has grown from 14 in 1997 to over 100. An impact study commissioned by the Illinois Grape Growers and Vintners Association estimates that the total economic impact of the Illinois wine

industry was \$692 million and provided 3887 full-time-equivalent jobs in 2012 (Rimerman et al., 2013).

Five of the top producing counties in Illinois are in part within the boundaries of the Shawnee Hills American Viticultural Area (AVA). In 1995 growers and winemakers in southern Illinois succeeded in petitioning the Alcohol and Tobacco Tax and Trade Bureau to become an official AVA. The petition was approved in December 2006 (MKF Research LLC, 2006). Shawnee Hills' unique *terroir* is part of what allowed this designation. *Terroir* is a concept relating the sensory attributes of the wine to the environmental conditions in which the grapes are grown.

Despite its growth many growers and vintners within the Shawnee Hills AVA feel that there is still untapped potential. The Shawnee Hills AVA has the elements present to capture

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more of the Illinois and even the American market. Seventy percent of the wines of the Shawnee Hills AVA are sold in winery tasting rooms (Ward 2012), and 60 percent of all visitors to the tasting rooms are local, traveling 50 miles or less to reach the winery (Smith et al., 2010).

European regional designation requirements can dictate such detail as what grapes may be grown, maximum grape yields, alcohol level, irrigation, and other quality factors before an appellation name may legally appear on a wine bottle label (Love 1997). In the US however the only requirement to use the AVA name on the wine label is that 85 percent of the wine must have come from grapes grown within the geographical AVA boundaries (Alcohol and Tobacco Tax Trade Bureau, 2012). Since AVAs were first introduced in 1982 many wineries in the US are turning to geographic designations to distinguish their wines and today there are over 230 in the US (Alcohol and Tobacco Tax and Trade Bureau, 2016).

The present research is intended to shed light on potential avenues to broader consumer recognition to the wineries and wines in the Shawnee AVA. The specific objective is to determine the key factors enhancing or constraining the competitive performance of wine businesses in the Shawnee Hills AVA. A winery competitiveness survey was administered to all winery owner/operators within the Shawnee Hills AVA. They were selected to participate in this study because of their knowledge of the area. Owner/operators are also those most responsible for the success and failure of strategy and operations. The goal of the survey was to discover the strengths and weaknesses of the current business environment within the Shawnee Hills AVA, and determine whether the infrastructure was in place to sustain a more prescriptive regional wine quality program.

Previous work

We first looked at research that sought to answer questions about what programs and strategies had been successful elsewhere. Cross et al. (2011) found no evidence of significant effects of a designated appellation on vineyard prices. Vineyard prices were, however determined by location within specific sub-AVAs.

Hillis, Luebell, and Hoffman (2010) surveyed winegrower perceptions of the Lodi Rules Sustainable Winegrowing Program (SWP). They concluded that growers are more influenced by immediate economic factors, and therefore not likely to participate in costly program activities.

Shaw et al. (2011) sought to discover the complementary effects of diffusion of innovation, cultural change, and social capital on the effectiveness of the Sustainable Winegrowing Program in Lodi, California. Participation in the Sustainable Winegrowing Program was positively associated with the adoption of sustainable practices.

Foti et al. (2011) conducted an assessment of the control systems in the Sicilian winemaking industry. They found that the implementation of a quality control program resulted in increased reputation and value of production. These effects accomplish significant benefits such as breaking into new

markets, guaranteeing product quality and safety, traceability, environmental protection, and the improvement of overall performance. They concluded that heightened consumer demand for higher quality and standardized products was a primary driver of this shift (Foti et al., 2011). This is consistent with the findings of both Cross et al. (2011) and Shaw et al. (2011), highlighting the importance of quality production and regional reputation across the global wine market.

Chiodo et al. (2011) examined the effects of regulation on quality perception. They considered the following often-used distinctions to differentiate products in labeling and presentation: organic farming, using additional producer organization brands (PDOs), specific indications about production methods such as name of producer and bottler, and the content of sulfur dioxide in the wines. They concluded that regulatory aspects of wine labeling and presentation affect Italian consumer perception, especially when linked to quality control, naturalness, and safety aspects.

Van Rooyen et al. (2011) conducted a study whose methodology we employed in our own survey. Their purpose was to analyze the competitive performance of the South African wine industry employing a four-step framework focusing on the environment in which the wine industry executives make decisions. The first step was to measure competitive performance through the Wine Competitiveness Rating (WCR), which was based on trade performance as measured by the Relative Trade Advantage (RTA) method (Balassa, 1989). The second step was to identify the major factors impacting competitive performance through interviews with industry experts through a Wine Executive Survey (WES). The WES was divided into six sections: *production factors*; *related and supporting industries*; *firm strategy, structure and rivalry*; *government support and policies*; *demand conditions*; *chance factors*. Respondents rated factors within each section as (1) mostly constraining, (2) modestly enhancing, or (3) most enhancing. The third step was to analyze the major factors and establish Determinants of Competitiveness (DC), using Michael Porter's (1990) "new" competitiveness theory. The final step was to use the information obtained in the first three steps to identify and analyze changes over time in the "competitive space" of the South African wine industry and then determine an industry agenda for improving competitive performance. The same survey instrument was administered in both 2005 and 2008.

Based on the results of their analyses, Van Rooyen et al. (2011) concluded that South Africa's wines are increasingly internationally competitive, with a strong positive trend since 1990. Recently however, this trend has diminished. To reverse this trend the researchers identified the role of regulation and the presence of supportive government policy environment to be highly relevant. To facilitate improvement the researchers recommended more "lobby discussions" and to build more trusting relationship between industry and government (Van Rooyen et al., 2011).

Rendleman et al. (2002) used an IMPLAN impact analysis to measure the contribution of the grape and wine sectors of the Illinois economy in 2000. They examined the economic in parts: first, effect of Illinois grown grapes, then the effect of

wine sales using only Illinois grown grapes, and finally the total effect of Illinois wine sales. In 2000 Illinois produced 530 t of grapes resulting in \$477,000 in sales. The total output effect of the entire grape and wine sector was found to be \$18,998,366, with the indirect portion equaling \$2,209,771 and the induced effect equaling \$6,013,443.

As of 2011 only 44 percent of Illinois wine was produced from Illinois grapes. However in the southern region of the state 83 percent comes from Illinois grapes (Ward, 2012). Many midwest wine quality programs rely on the use of regional fruit as a source of differentiation (Edwards, 2011).

Hoemmen et al. (2013) analyzed the structural changes that occurred over time within the developing Lodi and Central Coast regions. The objective of the research was to determine the most effective method of improving the reputation of wine quality in the Shawnee Hills AVA.

In Lodi approval of the AVA designation had the most impact on the weighted average grower return per ton (price), \$173.73. The creation of the regional quality wine program also exhibited a very substantial effect, \$165.81, on the weighted average grower return per ton. In the California Central Coast AVA creation of the regional quality wine program exhibited the greatest impact, \$372.88 per ton. Although the creation of the regional quality wine standards program variable exhibited the greatest effect, the establishment of the Central Coast AVA also exhibited a substantial effect on grower return of \$179.60 per ton. This suggests the importance of achieving the AVA status as it may have acted as a facilitator for each of the events that followed (Love, 1997). In both cases it appears important to achieve an AVA status and develop a regional quality wine standards program.

Data and methods

The wine competitiveness survey is based on a similar study conducted by Van Rooyen et al. (2011), to discover the strengths and weaknesses of the current business environment within the Shawnee Hills AVA, and determine whether the infrastructure was in place to sustain a regional wine quality program. The specific aim of this survey is to understand key factors influencing the competitive performance of wine businesses in the Shawnee Hills AVA. Competitive performance is the ability to sustain sales and growth against competition (Van Rooyen et al., 2011).

The focus of this inquiry was individual wineries. As with all firms, wineries are competitive when they are able to continue to increase their sales and improve their product quality in a global market environment. Owners and operators were surveyed because they were directly responsible for the success and failure of strategy and operations. Knowledge gained will better inform all participants in the Shawnee Hills AVA as to where its strengths and weaknesses lie, and where additional investment might best be made. Answers to these questions are important as they provide the basis for understanding an evolving situation, while helping to compete for survival and growth (Porter, 1990).

Our survey consisted of five total sections of related factors, four identified by the economist Michael Porter who grouped these key determinants of competitive performance into the “Porter Diamond.” (Porter, 1990). Section one was *production factors*, which examined the industry's endowment in factors of production, such as climate, terroir, skilled labor, infrastructure, etc. necessary to compete. Section two, *related and supporting industries*, looked into the presence or absence of competitive suppliers and other related industries. Section three looked into *firm strategy, structure and rivalry* or the way companies are created, organized and managed, as well as the nature of domestic rivalry. Section four analyzed *government support and policy*. This section was included because, as in the South African wine industry, governments connected to the Shawnee Hills AVA can influence each of the above determinants, either positively or negatively, through policies and the environment that is created, funding support and the provision of public goods to support private operational capacity and social stability. The final section, section five, looked into *demand conditions* or the nature, changes and knowledge of the market demand for the industry's products. A section analyzing “chance” factors was omitted because unlike the South African wine industry the Shawnee Hills is not greatly affected by changes in currency values or external factors impacting costs, such as crime and HIV/Aids (Van Rooyen et al., 2011). The participants were asked to rate the above factors impacting their competitive performance as: (5) mostly enhancing, (4) modestly enhancing, (3) neutral impact, (2) modestly constraining, or (1) mostly constraining. All nineteen winery Owner/Operators within the Shawnee Hills AVA received the survey and were instructed to rate each factor as it applied to their particular winery.

Seventeen out of the 19 wineries in the Shawnee Hills AVA completed and returned the survey. The data were then analyzed in clustered factor groups created using demographic information. The first cluster (data column one in each of the tables) aggregates responses from all of the sub-groups with no demographic breakdown. The second cluster (columns two and three) compares the results of wineries with a solo owner/operator (SOLO) and those that are owned and operated by multiple persons (MULTI). The third cluster (columns four and five) separates the winery owner/operators who were themselves the primary labor source (WM) from those who employed outside winemakers (NWM). Finally the fourth cluster (last three columns) was based on the number of years the winery had been open: one to five years (1–5), six to ten years (6–10), or more than ten years (10+). Survey questions were designed to discover the strengths and weaknesses of the current business environment in the Shawnee Hills AVA and to discover if the infrastructure was in place to sustain a regional wine quality program.

Survey factors of note included those related to government support both locally and statewide (Van Rooyen et al., 2011), belief or opinions on developmental innovation and research, collaborative relationships with research institutions, community cohesiveness especially between commercial grape growers and wineries, and the current state of grape supply. These factors

Table 1
Survey factors in each of the five sections of Winery Competitiveness Survey of Winery Owner/Operators in the Shawnee Hills AVA.

Production factors	Related and supporting industries	Firm strategy, structure, and rivalry	Government support and policies	Demand conditions
<i>Quality of low-level skilled labor</i>	<i>Electricity Supply</i>	<i>Expenditure on R&D in winery</i>	<i>Confidence/Trust in local political systems</i>	<i>Growth in Local Market</i>
<i>Cost of Transport</i>	<i>Collaboration with research institutions in R&D</i>	<i>Expenditure on R&D in vineyard</i>	<i>Confidence/Trust in State political system</i>	<i>Local Market Size</i>
<i>Cost of Financing</i>	<i>Telecommunication</i>	<i>Incentives for Management</i>	<i>Competence of Personnel in Public Sector</i>	<i>Competition in Local Market</i>
<i>Availability of skilled labor</i>	<i>Suppliers of packaging material</i>	<i>Flow of information from customers</i>	<i>Labor Policy & Regulation</i>	<i>Demand for Environmental Friendly Products</i>
<i>Overall Cost of doing business</i>	<i>Financial Institutions</i>	<i>Information flow from primary suppliers to company</i>	<i>Administrative/Bureaucratic Regulations</i>	<i>Regional Tourism Increase</i>
<i>Labor Administrative Cost</i>	<i>Transportation Companies</i>	<i>Substitutes of company's products or services (i.e. microbrews)</i>	<i>Land use regulation policies</i>	<i>Growth in United States Wine Market</i>
<i>Cost of Quality Technology</i>	<i>Internet Service Providers</i>	<i>Continuous Innovation</i>	<i>Employee hiring/firing policies</i>	<i>Consumer knowledge of local products</i>
<i>Quality of Skilled Labor</i>	<i>Social Media Services</i>	<i>AVA Regulatory Standards</i>	<i>Tax System</i>	<i>Sophistication of local buyers</i>
<i>Cost of Skilled Labor</i>	<i>Long-term Outlook of local grape suppliers</i>	<i>Efficiency of Technology in production process</i>	<i>Political Changes</i>	<i>Consumer Demand for Vinifera Wines</i>
<i>Cost of Infrastructure</i>	<i>Reputation of research institutions</i>	<i>Investment in Staff</i>	<i>Environmental Regulations</i>	<i>Demand for products in metropolitan areas</i>
<i>Credit Availability</i>	<i>Quality of local grape suppliers</i>	<i>Unique Services and Processes</i>	<i>Distribution policies</i>	
<i>Availability of Quality Technology</i>		<i>Entry of New Competitors</i>	<i>Federal Government Wine/grape policy</i>	
<i>Quality of Technology</i>		<i>Neighboring wine region product entry in local market</i>	<i>Complying with Environmental Standards</i>	
<i>Availability of Water for industrial purposes</i>		<i>Affordable high quality products</i>		
<i>Availability of low level skilled labor</i>		<i>Regional industry structure & rivalry</i>		

were included in the survey instrument because all were common points of industry importance found in studies of other wine industry regions where quality assurance programs have been successful, such as the Lodi and Central Coast AVAs (Hillis et al., 2010).

Results and discussion

Table 1 presents the each of the factors in the five sections. The data reported in tables 2 through 7 are the averaged responses. They are presented first as an overall result of all 17 winery owner/operator survey respondents and then compared by group using demographic information.

The three most enhancing factors overall in the Shawnee Hills AVA wine industry in 2013 in descending order were:

- regional tourism increase;
- growth in the United States wine market; continuous innovation; *

- unique services and processes; flow of information from customers; *

(* = Factors tied).

The three most constraining factors overall in the Shawnee Hills AVA wine industry in 2013 in descending order were:

- confidence/trust in state political system,
- tax system,
- administrative/bureaucratic regulations.

Table 2 reports the responses from each of the five areas surveyed averaged in each row. Regarding cluster sizes: six of the 17 wineries responding had female or joint male–female ownership. Four of the 17 owners employed hired winemakers other than the owner. Regarding ownership tenure, six of the wineries had been open between one and five years, seven had been operating between six and 10 years, and four had operated more than ten years and 13 were solo operators.

Table 2

Averaged overall key determinants – Results of Winery Competitiveness Survey of Winery Owner/Operators in the Shawnee Hills AVA.

	Overall	SOLO	MULTI	WM	NWM	1–5	6–10	10+
<i>Production Factors</i>	2.7	2.6	2.8	2.5	3.0	2.5	2.9	2.5
<i>Related & Supporting Industries</i>	3.1	3.0	3.3	3.1	3.2	3.0	3.2	3.2
<i>Firm Strategy, Structure, & Rivalry</i>	3.1	3.0	3.3	3.1	3.2	3.1	3.0	3.3
<i>Government Support & Policies</i>	2.3	2.3	2.3	2.2	2.5	2.3	2.4	2.1
<i>Demand Conditions</i>	3.1	2.9	3.5	3.1	3.3	3.3	2.9	3.3

***Ratings:** 1 = mostly constraining; 2 = mildly constraining; 3 = neutral; 4 = mildly enhancing; 5 = mostly enhancing.

***Legend:** All respondents = Overall; Solo owner = SOLO; Multiple Owners = MULTI; Owner performs winemaking tasks = WM; Owner hires labor to perform winemaking tasks = NWM; Number of years in business = 1–5, 6–10, 10+.

*Sample size = 17 total respondents.

Table 3

Production factor results.

Production factors	Overall	SOLO	MULTI	WM	NWM	1–5	6–10	10+
<i>Quality of low-level skilled labor</i>	2.9	3.1	2.7	2.8	3.3	2.8	3.1	2.8
<i>Cost of Transport</i>	2.3	2.5	2.0	2.3	2.3	2.5	2.4	1.8
<i>Cost of Financing</i>	2.4	2.4	2.5	2.5	2.0	2.8	2.1	2.3
<i>Availability of skilled labor</i>	2.6	2.7	2.5	2.4	3.5	1.8	3.1	3.0
<i>Overall Cost of doing business</i>	1.9	2.1	1.7	1.9	2.0	1.8	2.3	1.5
<i>Labor Administrative Cost</i>	2.6	2.5	2.7	2.5	2.8	2.8	2.7	2.0
<i>Cost of Quality Technology</i>	2.5	2.5	2.5	2.4	2.8	2.5	2.3	3.0
<i>Quality of Skilled Labor</i>	2.8	2.8	2.8	2.5	4.0	2.5	3.4	2.3
<i>Cost of Skilled Labor</i>	2.5	2.4	2.8	2.3	3.0	2.3	2.7	2.5
<i>Cost of Infrastructure</i>	2.2	2.3	2.2	2.0	3.0	1.8	2.4	2.5
<i>Credit Availability</i>	2.6	2.5	3.0	2.6	2.8	2.5	2.9	2.5
<i>Availability of Quality Technology</i>	3.1	2.8	3.7	3.1	3.3	2.8	3.6	2.8
<i>Quality of Technology</i>	3.4	3.0	4.0	3.3	3.5	3.3	3.6	3.0
<i>Availability of Water for industrial purposes</i>	3.2	2.8	3.8	2.9	4.0	3.2	3.3	3.0
<i>Availability of low level skilled labor</i>	2.6	2.6	2.7	2.4	3.5	2.3	3.1	2.3

***Ratings:** 1 = mostly constraining; 2 = mildly constraining; 3 = neutral; 4 = mildly enhancing; 5 = mostly enhancing.

***Legend:** All respondents = Overall; Solo owner = SOLO; Multiple Owners = MULTI; Owner performs winemaking tasks = WM; Owner hires labor to perform winemaking tasks = NWM; Number of years in business = 1–5, 6–10, 10+.

*Sample size = 17 total respondents.

Most of the production factor conditions in all clusters (row 1) were constraining, which indicates that the production environment currently in the Shawnee Hills could be improved.

More detail can be discerned from Table 3. The production factors with the most constraining effect on the competitiveness of the Shawnee Hills AVA was the *overall cost of doing business*, though *cost of infrastructure* and the *cost of transport* were also constraining. Similar results were reported by Van Rooyen et al. (2011) on the competitiveness of the South African wine industry. The *overall cost of doing business* was found to be a constraining factor in all clusters in Table 3. Although *availability of quality technology*, *quality of technology*, and *availability of water for industrial purposes* were all neutral in the overall column, it is worth noting that in both the MULTI and NWM clusters these factors were even

higher, bordering on modestly enhancing. It is also interesting to note that in the NWM cluster the *availability of skilled labor*, *the quality of skilled labor*, and *the availability of low-level skilled labor* were all either neutral or enhancing. This shows the importance non-winemaking owners put on the production process as it pertains to labor, and the appreciation they have for those employed. Skilled labor, especially as it applies to the grape growing and winemaking process, is essential to the development of any quality assurance program (Ohmart, 2005).

The *availability of skilled labor* and the *cost of infrastructure* were found to be to be very constraining for wineries open 1–5 years, but less so for those in business longer. These variables could both be attributed to the costly process of establishing a business. However, wineries that had been in

Table 4
Related & Supporting Industries Results.

Related and supporting industries	Overall	SOLO	MULTI	WM	NWM	1–5	6–10	10+
Electricity Supply	3.3	3.1	3.7	3.5	2.8	4.0	3.0	2.8
Collaboration with research institutions in R&D	3.1	3.0	3.2	2.9	3.5	2.8	3.3	3.0
Telecommunication	2.9	2.7	3.2	3.1	2.3	2.8	2.7	3.3
Suppliers of packaging material	3.3	3.3	3.3	3.3	3.3	3.0	3.3	3.8
Financial Institutions	3.2	3.2	3.2	3.2	3.0	3.3	3.1	3.0
Transportation Companies	3.1	3.2	2.8	3.0	3.3	3.0	3.1	3.0
Internet Service Providers	3.1	2.6	3.8	3.1	3.0	3.0	3.1	3.0
Social Media Services	3.3	2.9	4.0	3.2	3.8	3.0	3.0	4.3
Long-term Outlook of local grape suppliers	2.8	2.5	3.5	2.7	3.3	2.5	2.9	3.3
Reputation of research institutions	3.0	3.3	2.5	2.8	3.5	2.3	3.3	3.5
Quality of local grape suppliers	3.4	3.5	3.0	3.3	3.5	3.0	4.0	2.8

***Ratings:** 1 = mostly constraining; 2 = mildly constraining; 3 = neutral; 4 = mildly enhancing; 5 = mostly enhancing.

***Legend:** All respondents = Overall; Solo owner = SOLO; Multiple Owners = MULTI; Owner performs winemaking tasks = WM; Owner hires labor to perform winemaking tasks = NWM; Number of years in business = 1–5, 6–10, 10+.

***Sample size** = 17 total respondents.

Table 5
Firm strategy, structure, and rivalry results.

Firm strategy, structure, and rivalry	Overall	SOLO	MULTI	WM	NWM	1–5	6–10	10+
Expenditure on R&D in winery	2.7	2.7	2.7	2.8	2.3	2.5	2.7	3.0
Expenditure on R&D in vineyard	2.9	2.9	2.8	3.1	2.3	3.0	2.7	3.0
Incentives for Management	2.8	2.6	3.2	2.8	2.8	2.8	2.7	3.0
Flow of information from customers	3.6	3.5	3.8	3.5	3.8	3.5	3.3	4.3
Information flow from primary suppliers to company	3.4	3.5	3.2	3.4	3.5	3.3	3.3	3.8
Substitutes of company's products or services (i.e. microbrews)	3.4	3.4	3.3	3.3	3.5	3.2	3.1	4.0
Continuous Innovation	3.7	3.5	4.0	3.6	4.0	4.0	3.4	3.8
AVA Regulatory Standards	3.1	3.2	3.0	3.1	3.3	3.0	3.2	3.3
Efficiency of Technology in production process	2.9	2.8	3.2	3.0	2.8	2.7	3.1	3.0
Investment in Staff	3.4	3.2	3.8	3.5	3.3	3.3	3.4	3.5
Unique Services and Processes	3.6	3.5	3.8	3.5	4.0	3.5	3.4	4.3
Entry of New Competitors	2.6	2.8	2.3	2.7	2.3	3.0	2.5	2.3
Neighboring wine region product entry in local market	2.6	2.5	3.0	2.5	3.0	2.7	2.7	2.5
Affordable high quality products	2.9	2.5	3.7	2.7	3.8	3.0	2.9	3.0
Regional industry structure & rivalry	2.8	2.7	3.0	2.7	3.0	2.3	3.1	3.0

***Ratings:** 1 = mostly constraining; 2 = mildly constraining; 3 = neutral; 4 = mildly enhancing; 5 = mostly enhancing.

***Legend:** All respondents = Overall; Solo owner = SOLO; Multiple Owners = MULTI; Owner performs winemaking tasks = WM; Owner hires labor to perform winemaking tasks = NWM; Number of years in business = 1–5, 6–10, 10+.

***Sample size** = 17 total respondents.

business 10+ years exhibited the signs of growth such as highly constraining factors of *cost of transport* and *overall cost of doing business*. This could show the difficulties associated with the process of business expansion. These older wineries could have greater levels of production, which might require employing a distributor, which would increase overall costs, especially transport costs. These constraining factors are not unique to the Shawnee Hills (Van Rooyen et al., 2011).

The factors within the related and supporting industries section were predominantly neutral. The *long-term outlook of local grape suppliers* in the overall cluster (Table 4) is the most constraining of all related and supporting industry factors. This signals concern that there could be a shortage of grapes in the future. Grape supply is important as many Midwest wine quality programs rely on the use of regional fruit as a source of differentiation (Edwards, 2011). However it should be noted that in 10+ years in business column the *long-term outlook of local grape suppliers* was securely a neutral factor. This could mean that the longer a winery is in business the more established both its relationships with local suppliers and its own vineyard production becomes. Both of these outcomes would ease the fears associated with a shortage. In addition, the relationship between commercial grape growers and wineries must be secure and well defined if any wine quality program is to be sustainable (Shaw et al., 2011), as a common requirement of many regional wine quality programs is the reliance on AVA produced fruit. Furthermore the sustainability of local suppliers was seen as an enhancing factor on the competitiveness of a wine region (Van Rooyen et al., 2011).

Within the NWM cluster (Table 4) *collaboration with research institutions in Research & Development* was neutral, however this was seen as more constraining by winemaking owners. This should be seen as an area of potential improvement. In order for wine quality to be improved, an environment of enhancing collaboration between research institutions

such as Southern Illinois University and the winery owners, especially those who are the winemakers, must be established. The support of local research institutions such as universities can greatly aid both the funding and research development of wine quality programs (Hillis et al., 2010). For example, the Lodi AVA wine quality program relied greatly on the collaborative efforts with the University of California-Davis in regulation formation and participant education, and the South African wine industry considers the status of their local research institutions to be an enhancing factor (Van Rooyen et al., 2011).

A final note of comparison with the related and supporting industries section between wineries that have been open for 1–5 years, 6–10 years and those with 10+ years in business regards the factor *supply of electricity*. Wineries with 1–5 years of operation found the *supply of electricity* to be an enhancing factor. However, those in business 6–10 or 10+ years found this factor to be of relatively neutral impact, which could be attributed to an increase in size and thus electricity use as the wineries grew older.

The factors in Table 5 of all Firm Strategy, Structure, and Rivalry factors were predominantly neutral. The most enhancing factors across all clusters were *continuous innovation*, *unique services and processes*, and the *flow of information from customers*. This is an encouraging sign, as positive winery owner opinions in relation to both innovation and uniqueness are essential to the development of a differentiation strategy such as a wine quality assurance program (Love, 1997). The most constraining factors were often associated with competition, such as the *entry of new competitors* and *neighboring wine region product entry in local market*. Intense competition in local markets has resulted in enhancing characteristics in other markets by raising expectations for quality (Van Rooyen et al., 2011).

Within the firm strategy, structure, and rivalry (Table 5) a noticeable difference exists between the WM and NWM

Table 6
Government support and policies results.

Government support and policies	Overall	SOLO	MULTI	WM	NWM	1–5	6–10	10+
<i>Confidence/Trust in local political systems</i>	2.6	2.5	2.8	2.3	3.5	2.7	2.9	2.0
<i>Confidence/Trust in State political system</i>	1.5	1.4	1.7	1.3	2.0	1.3	1.6	1.5
<i>Competence of Personnel in Public Sector</i>	1.9	1.9	1.8	1.5	3.0	1.7	2.0	2.0
<i>Labor Policy & Regulation</i>	2.3	2.4	2.2	2.2	2.5	2.3	2.6	1.8
<i>Administrative/Bureaucratic Regulations</i>	1.8	2.0	1.5	1.7	2.3	1.8	1.9	1.8
<i>Land use regulation policies</i>	2.9	2.9	2.8	2.8	3.0	3.0	3.1	2.3
<i>Employee hiring/firing policies</i>	3.2	3.3	3.2	3.2	3.3	3.2	3.1	3.5
<i>Tax System</i>	1.6	1.7	1.5	1.6	1.8	1.5	1.9	1.5
<i>Political Changes</i>	1.9	1.9	2.0	2.0	1.8	2.0	2.0	1.8
<i>Environmental Regulations</i>	2.5	2.7	2.2	2.5	2.5	2.7	2.4	2.5
<i>Distribution policies</i>	2.2	2.2	2.3	2.5	1.5	2.7	2.0	2.0
<i>Federal Government Wine/grape policy</i>	2.6	2.6	2.5	2.6	2.5	3.0	2.4	2.3
<i>Complying with Environmental Standards</i>	2.8	2.8	2.8	2.8	3.0	2.7	2.9	3.0

***Ratings:** 1 = mostly constraining; 2 = mildly constraining; 3 = neutral; 4 = mildly enhancing; 5 = mostly enhancing.

***Legend:** All respondents = Overall; Solo owner = SOLO; Multiple Owners = MULTI; Owner performs winemaking tasks = WM; Owner hires labor to perform winemaking tasks = NWM; Number of years in business = 1–5, 6–10, 10+.

***Sample size** = 17 total respondents.

Table 7
Demand Conditions Results.

Demand conditions	Overall	SOLO	MULTI	WM	NWM	1–5	6–10	10+
<i>Growth in Local Market</i>	2.8	2.6	3.2	2.8	2.8	2.8	2.6	3.3
<i>Local Market Size</i>	2.9	2.6	3.3	2.8	3.0	2.7	2.7	3.5
<i>Competition in Local Market</i>	2.8	2.6	3.0	2.7	3.0	3.0	2.6	2.8
<i>Demand for Environmental Friendly Products</i>	3.1	3.3	2.8	3.1	3.3	2.8	3.1	3.5
<i>Regional Tourism Increase</i>	4.0	3.7	4.5	3.8	4.8	4.3	3.9	3.8
<i>Growth in United States Wine Market</i>	3.7	3.5	4.0	3.7	3.8	3.7	3.4	4.3
<i>Consumer knowledge of local products</i>	3.4	3.0	4.0	3.3	3.5	3.7	2.9	3.8
<i>Sophistication of local buyers</i>	3.0	2.9	3.2	2.9	3.3	3.2	2.9	3.0
<i>Consumer Demand for Vinifera Wines</i>	2.9	2.5	3.5	2.8	3.0	3.3	2.6	2.8
<i>Demand for products in metropolitan areas</i>	2.9	2.5	3.7	3.0	2.8	3.5	2.6	2.5

***Ratings:** 1 = mostly constraining; 2 = mildly constraining; 3 = neutral; 4 = mildly enhancing; 5 = mostly enhancing.

***Legend:** All respondents = Overall; Solo owner = SOLO; Multiple Owners = MULTI; Owner performs winemaking tasks = WM; Owner hires labor to perform winemaking tasks = NWM; Number of years in business = 1–5, 6–10, 10+.

***Sample size** = 17 total respondents.

clusters concerning expenditure on *research and development*. It appears that those owner/operators who also make the wine do not consider expenditures on R&D in both the winery and the vineyard to be as constraining as their counterparts who do not make the wine. It would be of greater value to the development of a wine quality program and thus the Shawnee Hills AVA if more positive *research and development* strategies could be established.

We also analyzed the differences between wineries that have been open for 1–5 years, 6–10 years, and those with 10+ years in business (Table 5). In this section of the survey, wineries with 1–5 years of business found the factor *regional industry structure and rivalry* to be constraining whereas owners whose wineries had been open 6+ years reported experiencing a neutral effect. Community cohesiveness must be improved as participation in regional partnerships increases the adoption of beneficial practices (Shaw et al., 2011).

Although either securely neutral or enhancing in all three age groups, it does appear that the factor *flow of information from customers* may become more enhancing as a winery is in business longer. These wineries may have developed more consistent lines of communication due to the length their relationships with regular customers. Similarly it appears that the wineries with 10+ years of business have a more favorable impression of substitute products such as micro-brews. This could be attributed to production of such products within these wineries themselves.

The factors in the government support and policies section were overwhelmingly constraining (Table 6). The most constraining factors across all clusters were *confidence/trust in state political systems*, *tax system*, and *administrative/bureaucratic regulations*. These are areas of concern as governments can provide a stable and consistent regulatory environment and tax policy (as well as funding through grants and tax breaks). This was also identified as the key area of strategic emphasis in the growth of the South African wine industry (Van Rooyen et al., 2011).

Some factors of note (in Table 6) include differences between the WM and NWM clusters especially as it applies

to *confidence/trust in local political systems* and *competence of personnel in public sector*. Winemakers found the factor *confidence/trust in local political systems* to be constraining whereas non-winemaking owners did not. Also, those who are winemakers found the factor *Competence of Personnel in Public Sector* to be highly constraining whereas their non-winemaking counterparts did not. This may indicate that, for one thing, government regulations are currently much more restrictive regarding winemaking than grape growing.

Illinois retains the three-tiered distribution system put in place in many states after Prohibition, however the state has become less restrictive in many ways. Illinois now allows small wineries to sell a certain amount directly to liquor outlets, it allows sales at festivals and in tasting rooms, and has instituted other liberalizations. The topic received much discussion at the recent Illinois Grape Growers and Vintners Association (IGGVA) meeting; the consensus being that some regulations were being relaxed while others were being tightened. Why then does “government support and policies” rank so low? Without further investigation to learn for sure, one likely explanation is the uncertainty and lack of stability regarding regulation and state support of the industry. Laws are still restrictive, Illinois’ business climate is considered unfriendly, and state funding for the wine industry has been pulled back.

A final note of comparison in the government support and policies section analyzed wineries that have been open for 1–5 years, 6–10 years and those with 10+ years in business. All three clusters in this section found nothing to be enhancing. It may appear that confidence and opinion on all factors related to the government is constraining and increases with number of years in business. Government factors are found to be constraining factors in many other regions of the wine world, particularly tax systems and the competence of public personnel (Van Rooyen et al., 2011).

The demand condition factors (Table 7) were varied yet showed a very high presence of neutrals and enhancing ratings. The factors with the most enhancing effects across all clusters include *regional tourism increase*, *growth in the United States*

wine market, and consumer knowledge of local products. Some of the more constraining effects across all clusters include *growth in local market* and *competition in local market*. This is encouraging as enhancing demand conditions can often offset the constraining conditions within the previous sections. Furthermore the reputation of a wine region can be built locally through tourism efforts. Consumers are more willing to pay more for wines that use an AVA designation they are familiar with (Cross et al., 2011). Additionally, consumers of Shawnee Hills wines are becoming more knowledgeable of regional offerings. This is important as consumer perceptions can be directly linked to the presence of regulatory features such as the presence of a regional wine quality program noted on a label (Chiodo et al., 2011).

Wineries with solo owners found *consumer demand for Vinifera wines* and *demand for products in metropolitan Areas* to be constraining whereas those with multiple owners found these factors to be neutral (Table 7).

A final note of comparison regarding demand conditions on wineries that have been open for 1–5 years and those with 10+ years in business: wineries with 1–5 years of business found the factors *growth in local market* and *local market size* (Table 7) to be constraining whereas those with 10+ years of business did not. Furthermore wineries with 1–5 years in business found the factors *consumer demand for Vinifera wines* and *demand for products in metropolitan areas* to be neutral whereas those with 10+ years of business found these same factors to be constraining. This is interesting as it shows a conflicting view of consumer demand between younger and older wineries. The wineries with 1–5 years of business appear to be more concerned about consumer demand locally whereas those with 10+ years of business appear to be more concerned with consumer demand outside of the local market.

Conclusion and recommendations

The Lodi and Central Coast AVA studies in California show that the presence and recognition of an area's possession of a distinct geography as referenced by an AVA can have an effect on price, as does the implementation of regional quality winemaking and grape growing standards (e.g., the Lodi Rules Sustainable Winegrowing Program and SIP Certification Program). Other AVAs may conclude that they should develop regional wine quality programs, thus decreasing the uncertainty in consumer wine purchases. Additionally we know that regional reputation and knowledge regarding quality production are key drivers of consumer demand (Foti et al., 2011). What are the key and potentially key drivers behind the demand for Shawnee Hills wines? This information would be of great value to the creation of a regional wine quality program. An expanded and regularly administered Shawnee Hills AVA Winery Competitiveness Survey might answer some of the uncertainties.

Although our sample size was limited and the results thus need to be interpreted with some caution, the wine competitiveness survey indicates a need to differentiate Shawnee Hill's wines from both neighboring wine regions in the short run and

global wines in the long run in order to penetrate the regional metropolitan markets such as Chicago, IL, St. Louis, MO, Nashville, TN and others. While a regional or AVA specific wine quality program has shown to help accomplish this task in other regions, the survey results also portrayed a current lack of essential financial support necessary to implement such a quality assurance program. As the most constraining element, government policies make an attractive target for improvement. Predictable and transparent laws, policies, and support structures would improve the business climate as would the removal of archaic restrictions.

Community partnerships are essential to the development of any regional quality program. If community cohesiveness can be improved then chances of government support should improve as well. In the Lodi AVA newsletters and grassroots coffee shop meetings were utilized to partly achieve this goal (Shaw et al., 2011). Whereas in South Africa, "lobby discussions" were conducted which brought government and industry leaders together (Van Rooyen et al., 2011). Finally, collaboration with research institutions must be improved. While both private enterprises and public research institutions may have similar goals, they may not be able to agree on the path to achievement of these goals simply because there is a lack of consistent lines of communication. Such collaborative efforts have shown to be successful in regulation formation and funding procurement in regions such as Lodi, CA, Iowa, Ohio, and others. A more united effort could only benefit the Shawnee Hills AVA.

There are, however, some positive factors already at work in the Shawnee Hills AVA as shown by the survey results. The Shawnee Hills AVA is filled with winery owner/operators who believe in the enhancing qualities of innovation and unique processes. Wine quality assurance programs could serve to encourage these things further. Furthermore it appears that the supply of local grapes is in no immediate danger of a shortage. This is important because most regional wine quality programs require the use of AVA grown fruit. Perhaps most intriguing, overall consumer demand in the United States for wine, specifically regionally identifiable wine with a sense of place is growing tremendously. With a united focus on product differentiation, the Shawnee Hills AVA has a chance to capture a portion of that growth.

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