

May 2020

A Comparative Analysis of Marketing Strategies for the Willamette Valley Wine Region and Hunter Valley Wine Region

Anna Self
Cleveland State University

Follow this and additional works at: <https://engagedscholarship.csuohio.edu/tdr>



Part of the [Marketing Commons](#)

[How does access to this work benefit you? Let us know!](#)

Recommended Citation

Self, Anna. "A Comparative Analysis of Marketing Strategies for the Willamette Valley Wine Region and Hunter Valley Wine Region." *The Downtown Review*. Vol. 6. Iss. 2 (2020) .
Available at: <https://engagedscholarship.csuohio.edu/tdr/vol6/iss2/3>

This Article is brought to you for free and open access by the Student Scholarship at EngagedScholarship@CSU. It has been accepted for inclusion in The Downtown Review by an authorized editor of EngagedScholarship@CSU. For more information, please contact library.es@csuohio.edu.

Although an ocean separates the Willamette Valley wine region in Oregon and the Hunter Valley wine region in New South Wales, Australia, their marketing strategies are very similar. Both regions make approximately a third of their sales from in-store wine tastings³ and encourage domestic and international tourists to tour the region. For smaller wineries like the ones found in the Willamette Valley wine region and the Hunter Valley wine region, the on-site tasting room allows more personal interactions to take place, which adds to the customer's total experience³. What is not sold directly to customers is distributed to local states and abroad. Oregon wineries sell to Canada, Japan, Europe, and South Korea⁵, while Australian wineries focus on the Chinese market. The main difference between the regions is that the Willamette Valley Wine Region is almost exclusively known for its high-quality Pinot Noir, while the Hunter Valley Region is known for both its high-quality Shiraz and Semillon.

The United States wine industry began in the Hudson Valley of New York in 1677¹, and New York remained the largest producer of wine in the US until the late nineteenth century when vineyards were planted in California¹. In the mid-1960s, most of the land suitable for vineyards in California was already purchased so winemakers began to look for new investments in Oregon and Washington. The cooler climates allowed them to adapt to the change in consumer demand and grow grapes that were more suitable for higher quality table wines rather than dessert wines¹. Although “virtually every state produces wine in some quantity”¹, California, New York, Washington, and Oregon are the largest producers due to their early advantage and their favorable state laws regarding their wine industries¹. In 2013, the wine industry revenue totaled \$16.7 billion after the industry grew an average of 3% per year from 2006 to 2013³. The industry was predicted to grow by 1.1% per year from 2014 to 2018³.

The boutique wine region of Willamette Valley in Oregon began planting Pinot Noir grapes in 1965⁴. The cooler climate of Willamette Valley closely resembled the areas of France that grew Riesling and Pinot Noir, allowing them to create high-quality Pinot Noirs. This surprised the global wine industry as no other location had managed to consistently create high-quality Pinot Noirs¹. Pinot Noir grapes are particularly difficult to grow because if the temperature is too cold, the grapes will not ripen and produce the expected quality². If it is too warm, the flavor will be bolder with undesirable fruit and aroma characteristics². When it was discovered that Willamette Valley could grow traditionally French grapes, multiple French families invested in the area and gave “Oregon vintners access to clones unavailable to competitors in California” to help improve the quality further¹. Due to the success of Willamette Valley's Pinot Noirs, Oregon passed a land-use law in 1973 that prevented urbanization of agricultural land so that the wine industry in Oregon could remain profitable¹. Willamette Valley gained global recognition when Eyrie Vineyards' 1975 Pinot Noir placed in the Top 10 at

the Gault-Millau French Wine Olympiades¹, and the first tourist brochure for the region was published in 1978¹. The tourist industry in Willamette Valley has continued to flourish since then and Oregon legislators supported the industry by passing a law in 1995 that legalized “direct to customer shipments, and in-store wine tastings”¹, which makes up approximately a third of the boutique wineries’ income³.

The Wine Industry of Australia began in the 1820’s when James Busby planted vines in the Hunter Valley region¹². Over time, vineyards have been planted in 65 wine-producing regions in Australia⁶ by approximately 2,300 companies⁷. “Australia is the sixth largest wine producing country”⁶ in the world, with approximately 80% of its production focused on still wine¹³. In the last 20 years, Australia has become the fourth largest exporter,⁶ and its volume of exports almost equals the volume of Old-World wine producers such as France and Spain⁷. Hunter Valley continues to produce wine and now generates 2% of Australian wine, with a focus on premier, award-winning wines¹¹. Hunter Valley wineries are most famous for their Shiraz and Semillon wines, which they have been making since 1867 and 1899, respectively¹¹.

One of the key points of boutique wineries’ strategy is creating a personal connection with customers. As the wineries in Willamette Valley and Hunter Valley are in rural areas, they attempt to make their winery a day trip or overnight trip destination by offering tasting rooms and partnering with local hotels and restaurants³. The tasting rooms allow customers to interact directly with the owners of the wineries and learn more about the production of the wine³. Customers are more likely to purchase wine from the tasting rooms if they consider the staff to be “friendly, knowledgeable, undertaking of visitor needs³.” Younger visitors want individual attention from staff, while older visitors prefer solitude when tasting³. If sales staff can adapt to their visitors, this personal connection increases the customer’s brand loyalty and makes them likely to be a repeat customer³. The sales generated from customers visiting tasting rooms are especially lucrative for wineries as the wine is sold at retail price but the winery does not have to share the profit with the rest of the supply chain like they do when they sell through a distributor³. In 2013, 5.2 million tourists visited the Willamette valley, and the wine industry contributed \$207.5 million to the Oregon economy⁴. In 2010, 2.8 million tourists visited Hunter Valley and spent over \$1 billion AUD, and Hunter Valley’s wineries contributed \$1.8 billion AUD to the New South Wales economy¹¹.

Whenever possible, wineries hope to have a strong brand that encourages repeat customers, regardless of how the wine was purchased. A strong brand is impacted less by competitors’ marketing strategies and allows the winery to charge a higher price to achieve larger margins⁷. In addition, having loyal customers reduces the amount of advertising and promotions a winery needs to do

to keep existing customers⁷. A high degree of brand loyalty gives wineries more negotiation power over their distributors, as customers begin to expect their brand of wine to be available⁷.

The main competitors of the Oregon wine industry are the wine industries in Virginia, North Carolina, California, New York, Washington, British Columbia, and Chile. The least significant threat is currently the wineries in Virginia and North Carolina, as Oregon's wine industry is larger than both states' industries combined, and they are only beginning to grow¹. In addition, the climate on the east coast is less suitable for growing grapes, as it is more humid during the summer and colder during the winter and spring². Because of the high cost of starting a vineyard, newcomers in the US wine industry produce small volumes that are only large enough to satisfy local tourism¹. The California wine industry is a larger threat to Oregon due to their access to institutions like UC Davis that provide invaluable research about how to improve their crops¹. The New York wine industry has research institutions such as Cornell University and is closer to New York City, one of the largest markets for wine purchase¹. New York has the comparative advantage over Oregon due to its land quality. However, New York wineries make less profit margin per bottle than Oregon wineries because they use hybrid grapes that while cheaper, reduce the quality of the wine¹.

The wine industries in Washington and British Columbia are the closest competitors geographically to Oregon, so they have a greater chance of selling their wines to consumers in Oregon. Fortunately, Washington and British Columbia are focused on growing Bordeaux varietals such as merlot, cabernet sauvignon, and chardonnay⁵, so the greatest risk to Oregon wineries is product substitution. The Washington and British Columbia wine industries grow and sell blends more often than Oregon wineries, as Oregon law requires that all wines be identified by the grape variety and contain at least 90% of that variety⁵. While this law prevents Oregon wineries from creating blends, it does allow them to differentiate their product from Washington and British Columbian wines as the high-quality option¹. In addition, Oregon wineries are the only winemakers in the Pacific Northwest allowed to sell to customers in other states directly⁵.

Chile is a competitor for both Oregon wineries and Australian wineries. Chile's wine industry is made up of mostly large producers with large grape acreages, and this allows them to benefit from economies of scale and offer their wines at a lower price than Oregon or Australian wines⁵. Chile's climate is more suitable for more varieties of grapes than either Oregon or Australia, and they are able to sell more wine varieties and styles on the global market¹⁰. Chilean wineries are a threat to Australian wineries that export to China—as of 2019, Chile was the largest volume exporter to China⁹. The Australian wine industry's second largest competitor is the New Zealand wine industry. From 1991 to 2000,

the New Zealand wine industry doubled in sized and increased from 150 to 358 wineries¹⁰. Because of the rapid increase in production, New Zealand wineries began to dump their products in the Australian market, causing Australian brands to offer price promotions and discounts to stay profitable⁷. Within the Australian industry itself, the Hunter Valley competes with the Clare Valley, Barossa Valley, and Coonawara and Margaret River that sell Riesling, Shiraz, and Cabernet Sauvignon, respectively.

The Hunter Valley region is “ranked the 10th most popular Australian location for international tourism and the 13th for domestic tourism”¹¹. Tourists come to Hunter Valley because of its attractive rural landscapes and proximity to ports¹¹. Its brand is internationally recognized due to its heritage and strong marketing program that hosts regional events¹¹. In Hunter Valley, there are 120 wineries, 65 restaurants, 3 golf courses, and 180 accommodation properties¹¹. The wineries directly employ 7,000 people and indirectly employ 10,000 people, while the other tourist-focused businesses employ an additional 30,000 people. Hunter Valley contributes \$502 million AUD in gross output and \$104 million AUD in wages and salaries to full and part-time employees¹². The region produces 25 million liters of wine per year valued at \$210 million AUD¹¹. The top five varieties of grapes are Semillon, Chardonnay, Shiraz, Verdelho, and Cabernet Sauvignon¹².

The Willamette Valley wine-related tourism contributed \$207.5 million in revenues to the Oregon economy¹⁷. In 2013, there was an estimated 17,099 wine-related jobs in Oregon with wages over \$527 million¹⁷ and gross output over \$128 million. Approximately 68% of the grapes grown in Willamette Valley are Pinot Noir¹⁶, although Pinot Gris, Chardonnay, Riesling, Pinot Meunier, Gamay Noir, Viognier, and Syrah are grown in Willamette Valley¹⁶. In 2019, Pinot Noir is expected to account for 13.1% of the US Wine Industry¹⁴. Because Willamette Valley wineries are known for consistent high-quality Pinot Noir, they began to thin their crops in 1984, as they believed the bulk decreased the quality of the grape¹⁵. Patty Skinkis, an associate professor with Oregon State University, conducted tests to determine the proper level of thinning winemakers should do and was able to help Casteel farms increase their crop size by one-quarter ton per acre, which yielded an additional \$75,000 in revenue¹⁵. In 2019, more wineries participated in Skinkis’ study and have increased their yield by 2.7 tons per acre¹⁴.

The main strength of the Willamette Valley wineries is their history of sharing information about how to produce a high-quality Pinot Noir (Appendix 1). This information sharing increases the region’s reputation as a high-quality producer, as all wines purchased from that region will have the same quality level. The length of Willamette’s reputation as a high-quality producer is another strength of the region. Ever since a Willamette Valley winery won the Gault-Millau French Wine Olympiades¹ in 1975, the region has had brand recognition

that is difficult to replicate. The choice to focus on the Pinot Noir grape is another strength for the Willamette Valley because studies have shown that red wine, when drunk in moderation, improves heart health. The Pinot Noir as a red wine is considered to be a healthier choice than white wines or beer, which helps decrease the threat of substitution slightly. Global trends in the wine industry suggest that consumers are looking to buy lighter, fresher wines, which are commonly produced in the Pacific Northwest. In addition to health-conscious consumers, ethical consumers looking for brands that are committed to corporate social responsibility are likely to choose an Oregon wine over another region's wine because in 2013, the Oregon wine industry contributed \$11.3 million to charities.

The most prominent weakness of the Willamette Valley (Appendix 1) is the weakness of the Pinot Noir grape itself. Because the Pinot Noir grape has a very thin skin, it is susceptible to light exposure, premature rot, fungal diseases, poor yields, and wilting due to poor soil conditions,¹⁴ all of which would negatively affect the winery's reputation and the region's reputation. The discord between the Willamette Valley producers and southern Oregon wineries is the next largest weakness in the Oregon wine industry. There is discord because a high-quality Pinot Noir is difficult to produce in southern Oregon. The Willamette Valley is near the coast, which keeps the temperature mild enough for the Pinot Noir grapes to grow¹. Mid and east Oregon are dry and desert-like¹, which creates difficulties for other boutique wine regions in Oregon. Thus, southern Oregon wineries do not have the same reputation and cannot meet the same level of sales as the wineries in their own state. The third weakness of the Willamette Valley wine industry is its habit of thinning the vines too much. The vines need to be thinned slightly to avoid a decrease in the quality of the grape, but Willamette Valley producers were overthinning for years and thus missed out on potential profit.

The most likely threat the Willamette Valley wine industry will face is substitution (Appendix 1). Substitution is a threat because the price of switching to another brand of wine or alcoholic beverage is low. Calorie or health-conscious people are less likely to switch to a different beverage because red wine is healthier than beer and has fewer calories, but less health-conscious people may switch. The Willamette Valley wine industry is likely to lose some customers to the New Zealand Pinot Noir producers. New Zealand wineries can offer their Pinot Noir at a lower cost than Willamette Valley since they have larger wineries that can take advantage of economies of scale and lower their costs. Willamette Valley producers are not able to achieve economies of scales because of the law passed in 1973, which set aside a limited amount of land available set aside for use in wine production. Thus, the only option wineries wishing to produce more volume have is to buy another winery's land, which is expensive and may not be feasible at the time when they would like to expand.

A fourth threat to Willamette Valley wine producers is climate change (Appendix 1). Grapes are more sensitive to the temperature changes occurring due to climate change than other common crops such as rice, corn, soybeans, and wheat². The Pinot Noir grape has a climate niche of 4 degrees Fahrenheit, which is one of the lowest for grapes. Willamette Valley has summer temperatures in the 90s during the day and 60s at night, so the grapes currently being grown are already susceptible to drastic changes in climate, and any change past the average temperatures could result in grapes of lesser quality. A fifth threat are state legislature changes. The law currently in place that allows Willamette Valley producers to directly ship their wines to customers out of state may change, and if changed, this would impact the entire Pacific Northwest as it is Oregon's main competitive advantage over similarly sized wineries in British Columbia. The Willamette Valley should ensure that it meets all the regulatory requirements set by the EU for the international wine trade⁶. Given the French involvement in the early production of Pinot Noir, this threat is unlikely to affect Willamette Valley wineries.

The largest opportunity available to wine producers in Willamette Valley is to participate in Patty Skinkis' study to improve their grape output if they previously overthinned their crops (Appendix 1). The excess grapes can either be made into more Pinot Noir or can be sold to Washington and British Columbian wineries that need additional grapes to make their red blends. Another opportunity is to adapt to the trend of selling boxed wine. US wineries have begun to push boxed wine in the marketplace as it is cheaper, more eco-friendly, and can sell a greater volume of wine per truck. Some wineries are offering tastings to prove to consumers that the quality does not suffer because of the new packaging¹⁴.

The main strength in the Australian wine industry is the high barrier for entry (Appendix 2). As there are 65 wine-producing regions in Australia, the industry is considered to be competitive, and the high capital costs required to establish a reputation in the industry are difficult to acquire and should discourage new entrants. Without new entrants, companies can expect to keep their same market share if they continue to evaluate their weaknesses, threats, and opportunities frequently. Another strength is the strong buyer power in the market. It is common for Australian winemakers to integrate backwards and acquire the vineyards to have more control over the grapes, but it is uncommon for them to integrate forward to become the distributor. This makes the buyer power stronger in a concentrated food and beverages retail industry.

The main weakness in the Australian wine industry is that wine is considered a luxury good by consumers (Appendix 2). All luxury goods are susceptible to economic downturns, and the resulting loss of sales will negatively affect production. Wineries in the Hunter Valley can lose sales if they rely on third party vendors to supply some of their grapes. Large companies often need to

source grapes from third-party growers because it is common for Australian winemakers to own their own vineyards. The lack of additional suitable land prevents the large companies from expanding their own vineyards.

The unknown availability of water is the largest threat in the Hunter Valley wine industry (Appendix 2). Even though the availability of water is unknown every season in Hunter Valley, and even though irrigation systems are in place already, they may not be enough if the drought continues. In addition to the drought, climate change can alter the weather in Hunter Valley and threaten the industry. Summer storms, higher humidity, heat stress, and variable temperatures can all lead to an increase in disease and pest outbreaks. This would delay the harvest and lower the quality of the wine when it is eventually produced. A third threat to the industry is that government regulations for the wine industry may change at any time. For example, the land in Hunter Valley is currently shared by wineries, mines, and residents. As the population grows, more land may be zoned as residential, which would impact wineries' abilities to expand. The coal mines currently being mined may stop yielding coal, in which case a new mine would be created, and if the vineyard is on top of a coal pocket, the government may step in to help the mining company. The wine industry is vulnerable to the threat of substitution due to low switching costs and different consumption patterns in different locations. Due to international trade agreements with the EU, it is important to define which regions and associated wines are protected so that the correct branding is used for grapes grown in Hunter Valley⁶.

Because Australia produces more wine than the market demand requires, their biggest opportunity is to redesign their packaging to be lightweight and easier to ship (Appendix 2). If the packaging can be shipped at a lower rate, more Australian wineries would be able to sell their excess wine, and the overall industry revenues would rise. The packaging should be lightweight (so as to fix the low reward from shipping heavy products) and sustainable (so as to better match modern consumer requirements for companies to be ethical and socially conscious). If companies are producing more grapes than necessary to make their traditional wines, they should use any additional grapes to create wine blends so that all grapes grown can be used and sold. If possible, Hunter Valley wineries should try to expand their customer base to Asian countries that have recently made free-trade agreements with the Australian government.

All boutique wineries focused on high-quality wine can take advantage of several industry trends. Millennials have shifted to drinking domestic wine or craft alcoholic beverages instead of standard light beers¹⁴, and as they are the largest customer block in the market, the Willamette Valley and Hunter Valley should increase their advertising for their in-store wine tastings. Both regions have the quality to make them stand out to customers, and millennials are known to enjoy the experience of a winery or restaurant as much as the food or beverage

itself. In 2013, Oregon had 545 single-site small businesses with fewer than 25 employees³, and if those businesses advertised correctly, they could capture the market of younger customers who prefer a personalized service with direct communication with the owner. The regional branding that both the Willamette Valley and Hunter Valley emphasize should be included in their advertisements, as it is a unique culture that large wineries cannot replicate. The history of the culture should be made clear, as since the Oregon wine industry began, it emphasized intangible elements like the social capital of coordinating institutional and theory knowledge¹. The Willamette Valley immediately specialized in a grape that required knowledge-sharing and immediately prioritized the regional reputation over the individual winery reputation¹.

The Willamette Valley wine industry should look to diversify the types of grapes they produce like the Hunter Valley region does. Relying on one unstable grape to provide the industry with 68% of its revenues is not a good long-term strategy. Climate change is already impacting both Oregon and Australia through the California and New South Wales fires, and a temperature change could be worse for the grapes than the smoke damage already affecting them. The Willamette Valley wine industry should reach out to the Southern Oregon wine producers to see if there is a type of grape that could grow in both locations. This would help both regions proactively minimize the climate change threat to their Pinot Noir grapes and minimize the discord between the regions. If the Willamette Valley waits too long and continues to hold onto this comparative advantage, then they will not be able to adjust quickly enough to make a profit in the year of the temperature change.

Overall, the Willamette Valley and the Hunter Valley have a similar sales and marketing strategy. Both regions focus on individual customer experiences to ensure that customer loyalty is built whenever possible. The Willamette Valley wine industry and the Hunter Valley wine industry make a third of their revenue from in-house wine tastings and wish to expand this business because creating customer experiences face-to-face allows them to share their unique regional cultures. Neither valley is large enough to benefit from economies of scale, so they have focused on producing the highest quality wine they can. Both have achieved an international reputation for high-quality wines that allows them to sell in various overseas markets. The Willamette Valley should learn from the Hunter Valley and further diversify their variety of grapes to sustain their business in case of temperature changes or diseases.

Appendix 1

Oregon SWOT

| | |
|-------------------|--------------------|
| Strengths: | Weaknesses: |
|-------------------|--------------------|

| | |
|---|--|
| 1. Culture of knowledge-sharing ¹ 2. International Reputation for Quality ¹ 3. Red Wine is Heart Healthy ¹⁴ 4. Commitment to Charity ¹⁷ 5. Global trend towards light, fresh wines ⁵ | 1. Reliance on Pinot Noir ¹⁴ 2. Discord between Willamette Valley producers and southern Oregon wineries ¹ 3. Thinned their crops too much ¹⁵ |
| Opportunities: 1. Participate in Patty Skinkis' study ¹⁵ 2. Sell Excess Crops to Washington and British Columbia 3. Begin Selling Boxed Wine ¹⁴ | Threats: 1. Substitution 2. New Competition from New Zealand ¹ 3. Increasing land costs ¹ 4. Climate Change ² 5. State Legislature Changes ¹⁴ 6. Wine Name Changes due to EU restrictions |

Appendix 2

Australia SWOT

| | |
|--|---|
| Strengths: 1. High Barrier for Entry ¹¹ 2. Strong Buyer Power ¹³ | Weaknesses: 1. Luxury Good ¹¹ 2. Reliance on Third Party Growers ¹³ |
| Opportunities: 1. Change Packaging to be Sustainable ⁸ 2. Create Blends of Wines ⁸ 3. Free-Trade Agreements with Asian countries have widened export opportunities ¹³ | Threats: 1. Unknown Availability of Water ⁸ 2. Government Regulation Changes ⁸ 3. Land Use Conflicts – residential and coal mining ¹¹ 4. Climate Change ¹¹ 5. Substitution 6. Wine Name Changes due to EU restrictions |

Bibliography

1. Hira, A., Gabreldar, H. US wine industry: following the Oregon trail. *Prometheus*. 2013 Dec; 31(4): 369-386.
2. Cutlip, K. On the job: Gregory Jones. *Weatherwise*. 2016 Sep-Oct; 69(5): 49-50.
3. Marlowe, B., Brown, E. A., Zheng, T. Winery tasting-room employee training: putting wine first in Oregon. *Journal of Quality*

- Assurance in Hospitality & Tourism*. 2016 Apr-June; 17(2): 89-100.
4. Victor Panichkul, Special for USA TODAY. Visit the new wine country: Oregon. *USA Today*.
<http://proxy.ulib.csuohio.edu:2066/login.aspx?direct=true&db=a9h&AN=J0E093852213115&site=ehost-live>. Accessed January 21, 2020.
 5. Carew, R., Florkowski, W. Wine industry developments in the Pacific Northwest: a comparative analysis of British Columbia, Washington State, and Oregon. *Journal of Wine Research*. 2012 March; 23(1): 27-45.
 6. Nallaperuma, K., Bandyopadhyay, A., Lockshin, L. A comparative analysis of experts' and consumers' perceptions of regionality in Australian wine purchase decisions. *Journal of Wine Research*. 2017;28(3):194-215.
 7. Bianchi, C., Drennan, J., Proud, B. Antecedents of consumer brand loyalty in the Australian wine industry. *Journal of wine research*. 2014 April 3; 25(2): 91-104.
 8. Fleming, A., Dowd, A-M. Climate change and transforming the industry. *Australian & New Zealand Grapegrower & Winemaker*. 2014 June 1; (605): 45-48.
 9. Morton, A. Australia beats France to head China's 2019 wine value charts - figures. *Aroq - Just-Drinks.com (Global News)*. July 2019: N.PAG.
<http://proxy.ulib.csuohio.edu:2066/login.aspx?direct=true&db=edb&AN=138175665&site=eds-live&scope=site>. Accessed January 21, 2020.
 10. Grant, B., Mounter, S., Fleming, E., Griffith, G., Villano, R. The Australian wine industry at the crossroads: A comparison of performance across major wine-exporting countries in 2000. *Australasian Journal of Regional Studies*. 2015 Jan 1; 21(1): 3-25.
 11. Briggs, G. Upper hunter region viticulture profile. *Department of Primary Industries*. 2013 June; (5): 1-7.
<https://researchguides.csuohio.edu/c.php?g=979833&p=7207913>. Accessed January 21, 2020.
 12. Gillespie, R., Clarke, M. Economic contribution of the Hunter Valley wine sector to the Hunter Valle economy. *Macquarie University*. 2017 Nov 27.
<https://researchguides.csuohio.edu/c.php?g=979833&p=7207913>. Accessed January 21, 2020.

13. MarketLine industry profile: wine in Australia. *Wine Industry Profile: Australia*. November 2018: N.PAG.
<http://proxy.ulib.csuohio.edu:2066/login.aspx?direct=true&db=edb&AN=134111272&site=eds-live&scope=site>. Accessed January 21, 2020.
14. Lombardo, C. Wineries in the US. *IBISWorld Industry Report 31213*. 2019 Dec: 1-44.
<https://proxy.ulib.csuohio.edu:6421/us/en/industry/31213/about>. Accessed January 21, 2020.
15. Eddy, D. Use sound science: are you leaving money on the ground? Research in commercial vineyards shows many growers are overthinning in pursuit of fine wine, cutting into their profits. *American Fruit Grower*. 2019 April; 139(4): 6-10
16. Willamette Valley Facts & Figures. *Willamettewines.com*.
<https://willamettewines.com/facts-figures/>. Published 2018. Accessed January 21, 2020.
17. Full Glass Research. Economic impact of Oregon wine. *The Economic Impact of the Wine and Wine Grape Industries on the Oregon Economy*. 2015 January: N.PAG.
<https://willamettewines.com/wp-content/uploads/2016/11/Willamette-Valley-Economic-Impact-of-Wine-Industry.pdf>. Accessed January 21, 2020.