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An economic model of wineries and enotourism

Jason Winfree[a,*], Christopher McIntosh[a], Timothy Nadreau[b]

[a]Department of Agricultural Economics and Rural Sociology, University of Idaho, United States
[b]School of Economic Sciences, Washington State University, United States

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Abstract

This paper uses a theoretical model to analyze the interaction between general wine sales and enotourism since many wineries sell wine through wine tours as well as wine to non-tourists. We assume that consumers of wine tours, or enotourists, are wine connoisseurs whereas naive wine drinkers drive non-tourism sales. In our model, enotourists use wine tours to judge the quality of the wine, which forms a reputation that is then used by naive wine consumers. We show that wineries may want to decrease (increase) the price of wine via enotourism if their quality is higher (lower) than expected. We analyze this under both exogenous and endogenous quality. We also show that if wineries share a collective reputation, then minimum quality standards can benefit all wineries.
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Keywords: Wine; Enotourism; Collective reputation

1. Introduction

According to the Wine Institute the annual consumption of wine in the U.S. has risen from 1.82 billion liters in 1980 to 3.59 billion liters in 2016. This growth in wine consumption has led to economic analysis of virtually every aspect of wine, including production, land values, and wine quality. It has also led to an increase in tours of wineries, or enotourism. It is estimated that the state of California alone generated $7.2 billion in wine tourism expenditures in 2015. Wine tourism is growing globally as well. There are now over 10 million wine tourists that travel to France each year. Not only can wineries generate money from tours by selling tickets for the tours or selling bottles on the tour, but it might also be a way for wineries to influence non-tourism sales. If wine tourists are knowledgeable or experienced, it is possible they can have a large impact on the reputation of the wine, which then impacts the demand for non-enotourism sales. These wine tourists can influence the wine's reputation via word of mouth or possibly through some media outlet (Nelson, 1970). Also, the enotourists themselves may change their wine purchasing behavior after the tour, thereby changing demand for wine purchased at a store. Our goal in this paper is to understand how the interaction between enotourism and traditional sales influence winery profits. Like many industries, wineries may use wine tours as a sort of advertisement and impact the reputation of the winery. Therefore, the pricing of any wine tours should consider the impact on the more traditional sales of wine.

Wine is widely recognized as an experience good, therefore the demand for wine depends heavily on the wine's reputation (Landon and Smith, 1997, 1998; Cardebat and Figuet, 2004; Stanziani, 2004; Benfratello et al., 2009; Gibbs et al., 2009; Castriota and Delmastro, 2012; Frick and Simmons, 2013). There can be two aspects to reputation; quality and size. A good reputation can signal quality, but a large reputation can also make consumers aware of the product and boost demand (Castriota and Delmastro, 2015). Connoisseurs often tour wineries to test various wines before the purchase, and naive consumers are more likely to rely on the wine's reputation which is created in part by the connoisseurs.

*Correspondence to: University of Idaho, 875 Perimeter Drive MS 2334, Moscow ID 83844-2334, USA. Fax: 208-885-5759.
E-mail addresses: jwinfree@uidaho.edu (J. Winfree), mcin-tosh@uidaho.edu (C. McIntosh), timothy.nadreau@wsu.edu (T. Nadreau).
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There are other applications of this model. For example, this issue is very similar to wine tasting competitions and sales. Wineries that want to build their reputation not only may have an incentive to foster tourism, but may also want to enter tasting competitions. The reputation for other types of food is often created via food critics. If restaurants or other food sellers want to increase their reputation, they can benefit from being reviewed by a critic. Therefore, critics often eat food for free, and while this might be attributed to good will to the critic, part of the explanation is that the food seller wants their product be critiqued. Similarly, many breweries offer free tours along with free beer. A possible explanation is that this helps with the reputation and therefore increases demand. Of course, this might depend on the quality of the product. Movies that are direct-to-video releases have not been vetted by critics as much as other movies, presumably due to their lower average quality.

This paper analyzes the impacts of enotourism on profitability and identifies an optimal pricing strategy. The model also shows how pricing strategies depend on the quality of the wine, and shows when enotourists will pay less than the marginal cost of producing the wine. If quality is endogenous, wineries that choose a high quality will try to foster more wine tourists and charge them a lower price. The model is then adapted to allow for a collective reputation where the reputation is for a group of geographically similar wineries, or if tours are joint with other wineries.

2. Literature review

Nelson (1970) first analyzed experience goods, in which quality is unknown before consumption. Other work uses this idea to show incentives when products exogenously have a high quality, but consumers cannot completely identify this quality. For example, sellers might want to signal a high quality product (Akerlof, 1970) or set standards (Leland, 1979) when asymmetric information is present and consumers cannot easily identify product quality. If firms are able to create a high reputation in this manner, then this can increase profits, in part, because it might be able to use the same brand for other products (Cabral, 2000). In the case of wineries, the wine tours may enable branding of the wine sold outside of the tours.

In other instances, firms may be able to choose a high quality product at a cost to increase their reputation. This is the example of endogenous quality. For example, Shapiro (1982) and Shapiro (1983) model reputation as a function of the firm's previous chosen quality levels. Under this scenario, there are different incentives for firms based on whether consumers respond more from good news or bad news (Board and Meyer-ter Vehn, 2013) and high quality firms can sell at higher prices if consumers see low prices as a signal of low quality (Allen, 1984).

Reputation is vital to firms in the wine industry, where there has been a long history of the importance of reputation on the demand for wine (Stanziani, 2004). For example, it has been shown that demand depends on both individual and collective reputation for Bordeaux wine (Landon and Smith, 1997, 1998) and that collective reputation is more important than individual reputation for German Riesling wine (Frick and Simmons, 2013). While asymmetric information between consumers and sellers may be decreasing over time in the market, reputation is still a significant factor in the wine industry (Cardebat and Figuet, 2004). For Italian wine, reputation appears to be more important for wine demand than taste (Benfratello et al., 2009) and individual firm reputation for wine in Italy is influenced by collective reputation (Castriota and Delmastro, 2012). Furthermore, the sensitivity of demand to reputation depends on the number of naive consumers and an increase in globalization may lead to more naive consumers and more sensitivity to reputation (Gibbs et al., 2009). Also, there is an optimal size for a group of wineries that share a collective reputation and if the group is too small, the reputation may not reach consumers, but if the group is too large, then free riding occurs and quality suffers (Castriota and Delmastro, 2015).

There is also a growing body of research on wine tourism. While much of this research focuses on demand for wine tourism, some studies examine the impacts of tourism on the winery as a whole. Wine tourists are typically “wine buffs” that are looking for trendy wine (MacKenzie, 1986) and wine tourism can create an opportunity for wineries to sell wine directly to consumers (Getz and Brown, 2006). Finally, enotourism can be a way to build brand loyalty (Dodd, 1995) and regional enotourism can not only help their wine industry, but can help the reputation of the country as a whole (Schlüter and Norrild, 2015).

3. Model

In this section we develop a sequential model of the relationship between wineries, enotourists and non-tourists. First, wine is produced with either exogenous or endogenous quality and consumers, both enotourists and non-tourists, have an expectation about quality. In other words, the quality is unknown prior to consumption and the actual quality may be above or below that expectation. Then, enotourists consume the wine which influences the reputation of the winery. These enotourists can influence the winery's reputation either via word of mouth, or through some type of media, as described by Nelson (1970).[1] The winery's reputation depends on the difference between the quality, expected quality and the number of enotourists. Finally, wine is sold to non-tourists and their demand is influenced by the reputation. This model does not preclude that there could be overlap between enotourists and non-tourists. For example, it may be the case that enotourists discover the wine quality on the tour, and then make purchasing decisions based on their experience and updated quality expectations.

Our model assumes that enotourism influences demand for non-tourism sales of wine through reputation. Therefore, inverse demand for enotourism is denoted as $p_e(q_e, k)$ and non-tourism wine inverse demand is given by $p_{nt}(q_{nt}, R(q_e, k))$, where p is prices, q is quantity, k is quality, and R is reputation.

[1] Nelson (1970) gives more detail on this process.

p, q and k are assumed to be non-negative. Both demand curves are downward sloping with regards to quantity $\frac{\partial p_e}{\partial q_e} < 0$, $\frac{\partial p_{nt}}{\partial q_{nt}} < 0$. A higher quality will weakly increase demand for enotourism, $\frac{\partial p_e}{\partial k} \geq 0$. If enotourism is defined as being purchased before the quality of wine is known, then quality will have no effect on enotourism. This will likely be the case if revenue generated from enotourism comes from the tour itself of in the form of advanced purchases. However, quality will increase sales via enotourism if wine is purchased after tasting the wine. Our model is consistent with the winery generating revenue either from bottles sold via enotourism, or simply from sales of the tours. Our model only assumes that revenue is generated from enotourism and that enotourism impacts demand for non-tourists.

Demand is upward sloping with regards to reputation $\frac{\partial p_{nt}}{\partial R} > 0$. Both demand curves are additively separable, $\frac{\partial^2 p_e}{\partial q_e \partial k} = 0$, $\frac{\partial^2 p_{nt}}{\partial q_{nt} \partial R} = 0$. The model allows for different marginal costs between enotourism, $c_e(k)$ and non-tourism sales, $c_{nt}(k)$, although for simplicity those marginal costs are assumed to be constant with respect to quantity. It is not clear as to which cost is higher. Marginal costs for enotourism sales could be lower than non-tourism sales because the wine may not need to be transported. However, costs associated with the actual tour of the winery may increase marginal costs. Marginal costs are increasing at an increasing rate with respect to quality, $\frac{dc_e}{dk} > 0$, $\frac{dc_{nt}}{dk} > 0$, $\frac{d^2 c_e}{dk^2} > 0$ and $\frac{d^2 c_e}{dk^2} > 0$.

Each winery maximizes the joint profits from both enotourism and non-tourism sales. Therefore, they choose the quantity demanded of enotourists and the quantity demanded of non-tourism sales. If quality is endogenous, they also choose quality to maximize profits.

3.1. Exogenous quality

This section treats quality as exogenous and reputation is determined by $R = f(q_e)(k - k^e)$ where $\frac{df}{dq_e} > 0$, $\frac{d^2 f}{dq_e^2} < 0$ and k^e represents the quality that consumers expect *a priori*. Therefore, the profit function for the firm is given by,

$$\pi = q_e p_e(q_e, k) + q_{nt} p_{nt}(q_{nt}, R(q_e, k)) - c_e q_e - c_{nt} q_{nt} \tag{1}$$

and the complementary slackness conditions are given by,

$$q_e \geq 0, p_e + q_e \frac{\partial p_e}{\partial q_e} + q_{nt} \frac{\partial p_{nt}}{\partial R} \frac{df}{dq_e}(k - k^e) - c_e \leq 0 \tag{2}$$

and

$$q_{nt} \geq 0, p_{nt} + q_{nt} \frac{\partial p_{nt}}{\partial q_{nt}} - c_{nt} \leq 0 \tag{3}$$

Eq. (2) shows the marginal impact of enotourism sales and Eq. (3) shows the marginal impact of non-tourism sales. Interior solutions would give prices of $p_e = c_e - q_e \frac{\partial p_e}{\partial q_e} - q_{nt} \frac{\partial p_{nt}}{\partial R} \frac{df}{dq_e}(k - k^e)$ and $p_{nt} = c_{nt} - q_{nt} \frac{\partial p_{nt}}{\partial q_{nt}}$. Eq. (2) shows that apart from the direct marginal revenue and cost, prices for enotourists should be lowered if the quality is higher than consumer's expectations, and be increased if quality is below consumer expectations. That is, as long as marginal revenue from enotourism sales is decreasing in q_e, $(2\frac{\partial p_e}{\partial q_e} + q_e \frac{\partial^2 p_e}{\partial q_e^2} < 0)$, than there is an incentive to increase demand for non-tourists through enotourism if and only if $k > k^e$. In other words, higher than expected quality wineries will want to market their winery through enotourism while lower than expected quality wineries will not. That is not to say that low quality wineries will not have enotourism, but if they have enotourism it will be at the expense of non-tourism sales. If $q_{nt} \frac{\partial p_{nt}}{\partial R} \frac{df}{dq_e}(k - k^e) > -q_e p_e(q_e)$ then enotourists would be paying less than marginal cost for wine. In this case, it may appear that non-tourists are subsidizing the enotourist's consumption. The quality of a wine, however, can only be determined through its consumption, and thus, the market suffers from incomplete information. Without the enotourists information regarding the winery's quality, a reputation may not exist and result in a change in sales.

3.2. Endogenous quality

In this section, the firm is able to choose quality. The complementary slackness conditions for quantities is the same as the previous section, however the complementary slackness condition for quality is given by,

$$k \geq 0, q_e \left[\frac{\partial p_e}{\partial k} - \frac{dc_e}{dk}\right] + q_{nt} \left[\frac{\partial p_{nt}}{\partial R} f(q_e) - \frac{dc_{nt}}{dk}\right] \leq 0 \tag{4}$$

Note that a local maximum does not imply a global maximum in this case. For example, suppose that $\frac{\partial \pi}{\partial k} < 0$ when $k = 0$. In this case, there is a local equilibrium such that the winery chooses $k = 0$, and thus quality cannot be above expectations and the winery will not choose to market the wine via enotourism as shown in Eq. (2). Therefore, there can be a local maximum of choosing to produce low quality and limited or no enotourism. However, another possible strategy is to produce a high quality wine, in which case the winery will try to attract many enotourists. For example, as k increases, the optimal amount of enotourism increases, again as Eq. (2) shows. As q_e increases, so can the marginal returns from quality since $\frac{df}{dq_e} > 0$. This implies that there may be a different local maximum where both quality and enotourism are higher. Therefore, multiple equilibria may exist. This is also shown in the Examples section.

3.3. Collective reputation

This section continues to assume endogenous quality, but also assumes that reputation is shared by a group of wineries so that the entire group has a reputation of $R = f(q_e)(\frac{\sum k_i}{N} - k^e)$, where N is the number of firms. This section is appropriate if the non-tourists base their demand on the reputation of the geographic region. For example, it could be the case that many wineries in a region have enotourism, and the reputation that is created by the enotourists is for the region, not the winery. The model becomes more complex when we introduce the collective reputation since firms do not

receive the full benefit of increasing quality. The wineries within that region may have an incentive to free-ride on the collective reputation of the other wineries on the tour and drive wine quality down (Winfree and McCluskey, 2005). In this case, the optimal quality solves the following equation,

$$q_e\left[\frac{\partial p_e}{\partial k}-\frac{dc_e}{dk}\right]+q_{nt}\left[\frac{\partial p_{nt}}{\partial R}\frac{f(q_e)}{N}-\frac{dc_{nt}}{dk}\right]=0 \tag{5}$$

Note that the marginal benefit of increasing quality is less when there is a collective reputation. More specifically, the marginal benefit of quality on non-tourism sales is $\frac{1}{N}$ times what it is without collective reputation. Therefore, the collective reputation decreases the incentive to invest. In this case, quality will be lower, which implies that the incentive to bring in enotourists is also lower. This incentive problem may be alleviated if the region institutes minimum quality standards.

3.4. Joint enotourism

Wine tours are often sold jointly by a group of wineries. In this situation it is likely that, enotourism sales, through bottles sold on the tours, are not only a function of the winery's quality, but also the quality of the other wineries on the tour. Mathematically, $\frac{\partial p_e}{\partial k}$ depends on the quality choices of the other wineries as well. Furthermore, if winery quality impacts revenue from enotourism, then enotourists are more likely focused on the winery as opposed to the region, so they are more likely to promote a winery instead of a region. Eq. (4) still holds in this case,[2] but the equilibrium will change because the optimal quality level now depends on other firms as well since the wine from other wineries is now treated as a substitute. We will note this difference in quality in the example section.

Joint enotourism could also change the demand for enotourism because of a change in visibility. Also, it may decrease the costs of the tours per winery. It is possible that some combination of increasing demand and decreasing costs with joint enotourism will override any impacts enotourism will have on non-tourism sales.

4. Example

Here we provide an example with functional forms to illustrate various incentives. Because concavity is not guaranteed in the objective function, a branch and bound algorithm is used to find the optimal values. The results are shown in Table 1. We first analyze a baseline case where cost functions are given by $c_e=c_{nt}=k^2$, demand for enotourism is given by $p_e=10-q_e$ and demand for non-tourism wine is given by $p_{nt}=10-q_{nt}+R$. Note that quality has no effect on enotourism. There is no collective reputation and represent the firm's reputation with $\sqrt{q_e}(k-k^e)$. The firm's profit function is given by,

$$\pi = q_e(10-q_e-k^2)+q_{nt}(10-q_{nt}+\sqrt{q_e}(k-k^e)-k^2) \tag{6}$$

[2]We are no longer assuming a collective reputation.

Table 1
Results from the example.

Variable	Low expectations	Medium expectations	High expectations
Baseline			
k^e	0	1	5
k	0.586	0.521	0
q_e	5.182	4.622	0
p_e	4.818	5.378	≥ 10
q_{nt}	5.495	4.349	5
p_{nt}	5.839	4.621	5
π	53.386	42.520	25
Collective Reputation with 10 firms			
k^e	0	1	5
k	0.056	0.050	0
q_e	5.030	4.555	0
p_e	4.970	5.445	≥ 10
q_{nt}	5.061	3.985	5
p_{nt}	5.065	3.987	5
π	50.601	40.669	25
Quality impacts enotourism			
k^e	0	1	5
k	0.737	0.685	0
q_e	5.593	5.025	0
p_e	5.265	5.803	≥ 10
q_{nt}	5.600	4.412	5
p_{nt}	6.143	4.882	5
π	57.771	46.269	25
Joint enotourism			
k^e	0	1	5
k	0.730	0.680	0
q_e	5.180	4.604	0
p_e	4.820	5.396	≥ 10
q_{nt}	5.564	4.426	5
p_{nt}	6.098	4.888	5
π	53.167	42.298	25

k^e represents expected quality by naive tourists.
k represents the firm's quality
q_e represents the quantity of enotourists.
p_e represents the price of enotourism.
q_{nt} represents the quantity of non-tourists.
p_{nt} represents the price of non-tourism sales.
π represents the firm's profit.

First, we will look at the case where $k^e=0$, that is consumers expect that the firm has not invested in quality at all. In this case, the firm maximizes profits when the firm sets a price for enotourism at 4.818 and a quality of 0.586. The winery will then charge non-tourists a price of 5.839. In this situation, the firm has produced a quality higher than expected by consumers, and so more enotourism will increase non-enotourism sales. Therefore, they charge enotourists less to get more of them to help their reputation.

Next we examine the case where $k^e=1$ since at this level of consumer expectation, if firms are optimizing, they are producing a lower level of quality than consumers expect. The firm maximizes profit when they choose a quality level of 0.521, charge enotourists 5.378 and charge non-tourists 4.621. So, if consumers have a higher expectation, the firm will invest less in quality and charge a higher price for enotourism so there will be

fewer enotourists because more enotourism hurts demand for non-tourism sales. Also, in this case there are other local maximums. At the point where $q_e = 0$ and $k = 0$ the marginal impact of increasing quality is negative and the marginal impact of increasing enotourism is negative. This implies that if the firm cannot make marginal changes, or decides on optimal strategies via marginal changes, they might be trapped in a non-globally optimal outcome of having no quality investments and no enotourism. In the case where $k^e = 5$,[3] the optimal strategy is $q_e = 0$ and $k = 0$. That is, if consumers have a high enough expectation, then the firm's best strategy is to not invest in quality and have no enotourism so their reputation is not hurt.

We now assume there are 10 firms that share a collective reputation so reputation is given by $\sqrt{q_e}\left(\frac{\sum k_i}{10} - k^e\right)$ and the firm's profit function is given by,

$$\pi = q_e(10 - q_e - k^2) + q_{nt}\left(10 - q_{nt} + \sqrt{q_e}\left(\frac{\sum k_i}{10} - k^e\right) - k^2\right) \tag{7}$$

If expected quality is zero, then the firm invests less in quality when there is a collective reputation compared to the baseline case. Since quality goes from 0.586 in the baseline case to 0.056, the winery will want less enotourism than in the baseline case since enotourists will not help the winery's reputation as much. Demand for non-tourism sales drops due to the lower quality as well. The free-riding on reputation causes a decrease in profits from 53.386 in the baseline case to 50.601 with collective reputation. If $k^e = 1$, the effects are similar. However, if the expected quality is high enough ($k^e = 5$), then collective reputation makes no difference since there is no incentive to invest in quality for enotourism. Therefore, collective reputation weakly decreases the investment into quality and the amount of enotourism and non-tourism sales.

In the next example, quality impacts sales of enotourism, $\frac{\partial p_e}{\partial k} > 0$. Demand for enotourism sales is given by, $p_e = 10 - q_e + \sqrt{k}$ and there is no longer collective reputation so that $R = \sqrt{q_e}(k - k^e)$. The firm's profit function is given by,

$$\pi = q_e(10 - q_e + \sqrt{k} - k^2) + q_{nt}(10 - q_{nt} + \sqrt{q_e}(k - k^e) - k^2) \tag{8}$$

The results are not surprising. Since quality affects both demand curves, it increases to 0.737 compared to 0.586 in the baseline case when $k^e = 0$. When quality impacts enotourism, the amount of enotourism rises from 5.182 to 5.593 and the amount of non-tourism sales and profits are always at least as high as the baseline case no matter what consumers expect. However, the changes seem to be much larger for enotourism sales compared to non-tourism sales. Again when $k^e = 0$, non-tourism sales only increase from 5.495 to 5.6. This is intuitive since enotourism is affected directly through quality, while demand for non-tourism sales are affected indirectly through enotourism.

In the last example, we examine joint enotourism with 10 firms. Here demand for enotourism not only depends on the quality of the firms, but it also has a negative relationship with the quality of the other firms. We assume that demand for enotourism is given by, $10 - q_e + \sqrt{k} - \sqrt{\frac{\sum k_i - k}{N-1}}$, and therefore profit is given by,

$$\pi = q_e\left(10 - q_e + \sqrt{k} - \sqrt{\frac{\sum k_i - k}{N-1}} - k^2\right) + q_{nt}(10 - q_{nt} + \sqrt{q_e}(k - k^e) - k^2) \tag{9}$$

Table 1 shows that $q_e + p_e = 10$, just like the baseline case. Since all firms are symmetrical, the overall demand for enotourism does not change in equilibrium. However, firms will invest more into quality, when compared to the baseline, because if they do not they will lose demand for enotourism. When $k^e = 0$, quality goes from 0.586 to 0.730. Also, because cost per unit is higher, both prices are higher with joint tourism. Prices for enotourism go up slightly from 4.818 to 4.82 and prices for non-tourism sales go from 5.839 to 6.098. Joint tourism causes profits to decrease from 53.386 to 53.167.

Under the four different scenarios, in the absence of any enotourism the optimal price is 5. The largest price increase due to enotourism comes in the third scenario where $k^e = 0$ and the optimal price for non-tourists is 6.143, which represents a 22.9% increase. In work by Frick and Simmons (2013), there were seven different categories of reputation, and moving up one category increased price by 13%. Therefore, using the numbers in our example, the biggest impact of enotourism increases the reputation between one and two categories out of seven. The largest decrease in price due to enotourism comes in the second scenario where $k^e = 1$ and the optimal price for non-tourists is 3.987, a 20.3% decrease. Using the previous literature as a metric, these numbers represent a decrease in reputation of between one and two categories out of seven. While it is difficult to know the magnitude of the effects of enotourism, the changes in the numerical example seem plausible.

5. Conclusion

Wine tourism is a growing industry and this paper uses a theoretical model to show how it can interact with traditional sales of wine. Because wine is an experience good and the quality is unknown before consumption, enotourism can be a way for wineries to build or change their reputation. This implies that enotourists, which are typically wine connoisseurs, have an impact on the demand for traditional sales in a similar way to wine critics or wine tasting competitions. This influences the market for wineries and the optimal pricing structure depends on this interaction.

Our model shows that high quality wineries will want many enotourists to help promote their wine, but low quality wineries will not want enotourists. Furthermore, if enotourism is primarily altering the perception of a geographic region, as opposed to an individual winery, then wineries will underinvest in quality. This result begs the question of whether individual or collective reputation dominates in determining demand. In other words, if consumers do not distinguish individual wineries, then there is much less incentive to invest in quality and all wineries would be

[3] We choose $k^e = 5$ because if $k^e = 4$ then the optimal level of enotourism is nonzero.

better off with a minimum quality standard. On the other hand, if wine tours are for a group of wineries, and enotourists are trying to find the best wine of the group, then enotourism causes over investment in quality. That is, more quality competition among wineries will decrease profits.

The purpose of this study is to illustrate some of the incentives faced with enotourism. However, many other factors were not taken into account in the model. For example, it is likely that many enotourists enjoy winery visits for more than just wine. It could be the case that high quality wineries will invest in higher quality facilities and other attributes that will make the enotourism experience very different from other wineries. The price of enotourism may bundle many amenities, which may result in high quality wineries charging a larger amount. Furthermore, some wineries may have a more known quality, which could also conflate winery and store prices.

There are many extensions to this work. With joint tourism, it may be possible to tax or subsidize wineries based on their quality in the hopes of reducing the level of free-riding. Also, heterogeneity of the firms could change the results. For example, some consumers may place a higher premium on quality than others, which could create multiple equilibria. Other variables that influence demand, such as income, could also complicate the analysis. There could also be various types of branding or marketing that could interact with wine tourism and traditional sales. However, given that product knowledge has become increasingly important to consumers, it is likely that wine tourism will continue to impact traditional wine sales.

Conflict of interest

None declared.

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