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Old World and New World Sparkling Wines: Consumer Decisions and Insights for Retailers

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Abstract: The objective of this research is to examine consumer demand for sparkling wines. We developed a lab experiment to collect data on consumers' willingness to pay (WTP) for selected wines from France, Spain, and the United States (Finger Lakes) under different information treatments. Our results suggest that expenditures and consumption frequency for all wines are most important to WTP, and notably that familiarity with sparkling wines was relatively important for the "local" U.S. wine among the consumers in our sample. We discuss the important implications of our findings for managers of small U.S. wineries building their reputations and for restaurants and other food service outlets interested in attracting a broader consumer base.

Keywords: Sparkling wine; consumer demand; tasting; lab experiment, local.

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Introduction

We have witnessed substantial growth in the consumption of sparkling wine in the United States. Between 2011 and 2019, total consumption of sparkling wine at home increased from \$1.9 billion to over \$3.7 billion, and over the same time period consumption in food service outlets increased from \$1.3 billion to \$2.8 billion (Statista 2020). Projections indicate that total sales will exceed \$7.5 billion by 2023. Traditionally, a large share of the sparkling wine market was comprised of products imported from France. Indeed, the United States is the largest destination market for French Champagne based on value and the second largest based on volume (Comité Champagne, 2020), and accounts for approximately \$800 million annually. However, more recently there have been increased imports from other European regions; U.S. imports of Italian sparkling wine exceeded \$500 million in 2019 and U.S. imports of Spanish sparkling wine have been approximately \$100 million in recent years (UN Comtrade Database, 2020). At the same time, we have witnessed a non-trivial increase in the production and sales of domestically produced sparkling wine. Much of the domestic wine is produced in California, but there are many other burgeoning regions in the United States that are producing sparkling wine and receiving accolades including Virginia, Oregon, New Mexico, Washington State and New York State (Asimov, 2019; Shanken, 2020).

This growing interest in sparkling wines among U.S. consumers has fueled recent research examining the factors that can be linked to increased sales. Lerro et al. (2019) studied behavior and preferences of U.S. consumers and find evidence that gender and generational peculiarities are important considerations for sparkling wine consumption. Comparing Anglophone countries and focusing on the engagement of Generation Y with sparkling wines, Charters et al. (2011) find that different stages of life, rather than simply age, are highly

correlated with the demand for sparkling wine. Ristic et al. (2019) also note that the consumption of sparkling wine is often associated with a special occasion. There is also a substantial body of work that has examined similar questions for still wines (e.g., see Kerr et al. 2004; Hussain et al. 2007; Pickering et al. 2014). Overall, there is evidence that U.S. wines sales (and, notably, U.S. sparkling wines sales) have been driven, in part, by increased product availability from domestic producers and imports, increased marketing efforts for wines and wine regions, an increasingly sophisticated consumer base in the U.S., and a greater prevalence of expert ratings in the marketplace.

Previous work studying consumer demand for wine has paid special attention to the role of expert reviews (e.g., Costanigro et al. 2010; Hilger et al. 2011). For many products, including food and beverages, automobiles, movies, restaurants, hotels, and books, there has been a proliferation of information used to promote individual firms and products, including expert reviews (see Wang, Liu, and Fang 2015). These reviews have important marketing implications, and there is evidence that they are particularly influential for new or novel (non-traditional) products (e.g., Anderson and Magruder 2012). Furthermore, it is expected that the role of such reviews may differ for products that have a stronger reputation (Ali et al. 2008; Kramer 2011) or for products that are better known among consumers. Sparkling wine is a compelling product to study as the products in this category are often associated with very different levels of product recognition (or reputation), and the impact of expert ratings may differ across this continuum of recognition (Hilger et al. 2011).

Our research employs an incentivized laboratory experiment to elicit consumers' willing to pay (WTP) for three sparkling wines. We collect WTP bids for the three wines under different information treatments that provide subjects with details about the wines. The treatments

consider the role of information about production methods, a wine tasting, and expert reviews. Results from our research uncover the role that information has on consumer demand for the three wines, and it will allow us to identify specific traits among consumers that help determine demand for the selected sparkling wines. Our findings also provide practical insights to firms that manufacture, market, and sell sparkling wine.

Experimental Design

This research developed a lab experiment to collect data on consumer demand for three sparkling wines; all subjects were introduced to a sparkling wine produced in France (Champagne), Spain (Cava), and the United States (a sparkling wine from the Finger Lakes region in New York). These wines were specifically chosen to reflect regions with different reputations and with different market shares. The data were collected in June and July 2019 in the Lab for Experimental Economics and Decision Research (LEEDR) at Cornell University during six sessions, with between 20 and 25 participants in each session. Participants were recruited in the city of Ithaca, New York, and therefore we expect that our subject pool would consider the wine from the Finger Lakes region to be a “local” wine.

The subjects were recruited through advertisements posted in the primary news publication distributed to staff members at our university, and our recruitment advertisement specifically called for subjects that had purchased wine within 90 days of the experiment. When subjects arrived for a session, their age was checked, and they were seated randomly at individual computer terminals with privacy shields and informed that all their decisions would be kept strictly confidential. Subjects were paid \$30 to participate. The same presentation and script was used during the six sessions, with the same speaker. After signing a consent form, participants were given a brief introduction of the experiment, which included the amount of

money they would earn and rules of the experiment. We began each session with a practice round so as to teach and demonstrate how the WTP auctions would be conducted. In this practice round, subjects submitted bids for a box of adhesive bandages and became familiar with the bidding process that was used in the auctions for the wine. Participants were encouraged to ask questions and expose potential uncertainties. We carefully explained why it is in the participants' best interest to bid exactly the amount the product is worth to them. During the practice auction, the auction mechanism and bidding process were explained as well as the outcomes for participants if their bid was equal to or higher on the first hand, or lower on the other hand, than the market price of the item.

Our experiment was designed to be incentive compatible. We asked subjects to place bids that characterized the most they would be willing to pay for each bottle of wine. The Becker-DeGroot-Marschak (BDM) auction was employed to elicit bids for the three wines from all subjects in each round. Given that subjects may have a wide range of valuations, the BDM is an ideal elicitation method because subjects do not bid against each other. Rather, they submit a sealed bid for each wine and then have the chance to "win" a bottle of wine if their bid exceeds a randomly drawn price. After all bids were submitted in a session, we randomly chose a market price for one of the wines. The distribution of potential market prices ranged from 50% below to 50% above the average retail price of the wines included in our experiment. To avoid any possible anchoring, the subjects were only informed that the market prices were distributed around the true market mean with no mention of the mean market price or magnitude of the variation. In cases where subjects' bids of the randomly chosen subject was equal to or exceeded the market price, we sold that wine to the subject for the market price. Lusk, Feldkamp, and Schroeder (2004) reviewed four of the common experimental auction procedures used by

economists to elicit WTP data, and their empirical findings support the use of the BDM auction for our application.

The experiment followed a within-subject design that exposed all consumers to a series of information rounds, and subjects placed a WTP bid on each wine at the end of each round. The label for each wine was not disclosed to our subjects at any point during, or at the conclusion of, the experiment. In the first round we simply revealed the country of production for the wine. We also indicated that the styles of each wine were similar (i.e., dry or brut). The second round introduced objective information about the wine that described how it was produced. Here we emphasized that all three wines followed the same production techniques, and that all three wines were produced using the *Méthode Traditionelle* (which is technically equivalent to the process *Méthode Champenoise*, although the latter is a term restricted to wines produced in the Champagne region in France). In short, we explained to subjects that this method is a labor-intensive process that involves two stages of fermentation with the second stage occurring inside the bottle to create the bubbles. A tasting of each wine was conducted in the third round; here we provided each subject with a tasting of approximately 50 mL of each wine. The wines were served in standard wines glasses and the wine was served at approximately 45 degrees Fahrenheit. Subjects were allowed to keep the glasses at their station after the conclusion of the third round, and many subjects continued to sample the wines in round four and as they completed the survey at the end of the experiment. In the fourth round, we provided subjects with expert scores for each wine before they placed their bid. The expert scores were taken from the *Wine Spectator*, and in this case all three wines received identical scores (88/100). In addition to the numerical score rating, we also shared the written summary and evaluation of the wines that was published by the *Wine Spectator* (see Appendix A).

Following the experiment each subject answered a series of questions describing their socio-economic status as well as a series of questions about their wine purchase and consumption habits, their knowledge of wine, and their subjective opinions about wines more generally. We also included a series of questions asking subjects specific technical details about wine to test their knowledge directly. After all participants completed the survey, we randomly drew a poker chip from a bag of chips that indicated the binding round, wine, and market price for the session. We asked participants with a bid equal to or higher than the market price for the randomly selected wine and round to purchase that wine. At the end of the session, each participant came to the cashier and received USD 30 for taking part in the auction, less the price of the wine if they won the auction. Finally, after the subjects left the lab, we also documented whether they consumed the full 50 mL for each of the three wines presented in the experiment.

We collected WTP data from 141 subjects. Each subject placed a WTP bid on each wine after each round yielding a total of 564 observations for each wine. All subjects placed WTP bids for all wines in all rounds, however, some subjects did not complete answers to all the questions in the survey (or selected that they “Prefer not to answer” selected questions). Therefore, in the analysis below we focus on the complete responses submitted by 119 subjects and the corresponding 476 WTP bids.

Data and Methods

Table 1 provides a summary of the key demographic variables that describe our subject pool. In the first three rows we show the summary statistics for the WTP bids submitted for the three wines across all four rounds. The average WTP for the French wine was more than \$15 and the average WTP for the Spanish and U.S. wines were approximately \$12. All of these values were lower than the retail values for the wines, but each of the mean values in Table 1 includes some

bids of \$0 for subjects with no interest in buying a wine (7%, 14%, and 11%, respectively, for the French, Spanish, and U.S. wines). In our sample, approximately 75% of the subjects were under 55 years of age, 70% had earned a bachelors or master's degree, 75% were female, 58% were married, 35% were from households with total income between \$40,000 and \$80,000, and for race, 76% identified as white.

We first estimate separate cross-sectional Tobit regression models (Tobin 1958) to highlight the significant predictors of consumer willingness to pay for each wine in each round,

$$(1) \quad WTP_i^{w,r} = \alpha + \boldsymbol{\beta}^T \mathbf{X}_i + \boldsymbol{\gamma}^T \mathbf{P}_i + \varepsilon_i$$

Where $WTP_i^{w,r}$ is subject i 's willingness to pay for wine w in round r , \mathbf{X}_i is a vector of individual-level demographic variables, and \mathbf{P}_i represents a vector of covariates capturing subject i 's wine purchase and consumption habits, their knowledge of wine, and their opinions about wines.

We further explore the role of consumer preference heterogeneity in willingness to pay for sparkling wines by adopting machine learning techniques to examine the variables that were the most important predictors of consumers' WTP. More specifically, we used the random forest regression algorithm, a supervised learning technique that constructs a meta-estimator by fitting a large number of regression trees (in our case we set this parameter equal to 500) on various subsamples of the data (Breiman 2001). Additional details on the application of this method in economics are summarized nicely in Bajari et al. (2015) and Athey and Imbens (2019). We run this estimation separately for each wine, using WTP data across all four rounds.

Machine learning techniques, and in particular random forest models, are especially useful for prediction and classification problems, and they relax the restrictions of many parametric models. In our case, the random forest algorithm is ideal to analyze the data given

that it is an ensemble method that fits many regression trees and therefore overcomes many of the limitations of a single tree approach such as overfitting and tree instability. Furthermore, we used the random forest algorithm rather than regression trees or conditional inference trees as the latter are sensitive to the number of observations required per node. The bootstrap sampling procedure employed in the random forest algorithm overcomes this limitation and is therefore commonly used when the number of observations is relatively small, and the number of predictors is relatively large (Verikas et al. 2011).

Results and Discussion

Table 2 presents results for predictors that are statistically significant at the 5% level from the Tobit regression models described in Equation 1. In Table 2 we simply use a positive or negative sign to indicate the direction of the statistically significant effects. What is immediately clear from the table is the substantial heterogeneity that exists across both wines and rounds with regards to statistically significant predictors. However, some predictors do have relatively consistent impacts across regressions. For example, individuals that learn about wines through ads (*learn_ad*) and those that agree with the statement that they feel quite knowledgeable about wine (*op_knowledgeable*) tend to have higher WTPs across most wines and rounds. Individuals that consume red (*cons_red*) wine also tend to have higher WTPs for several rounds for each wine as well. On the contrary, individuals that are the primary food shopper in their household (*foodshopper*) and those that agree with the statement that they are one of the wine experts among their friends (*op_expert*) tend to have lower WTPs across most wines and rounds.

If we examine the French Champagne tobit regression results, household income (*inc*), the average amount typically spent on a bottle of wine (*avgspend*), and more frequent purchasing of wine online (*buywineonline*) all have a positive impact on WTP for French Champagne in the

first two rounds. Subjects that learn about wine through recommendations from friends and family (*learn_rec*), those that place greater importance on social media when making decisions (*wt_social*), and those that agree with the statement that they rarely come across a wine they have not heard of (*op_rarenoheard*) tend to have lower WTPs in the latter rounds of the experiment. Individuals that believe they have heard of most new wines have higher WTP for French Champagne in the latter rounds.

For the Spanish Cava, age is negatively correlated with WTP across all rounds; whereas a subject's likelihood of purchasing a bottle of wine they have not tried before (*buywine*), the average amount typically spent on a bottle of wine (*avgspend*), the frequency with which a subject drinks sparkling wine, and consumption of red wine (*cons_red*) were all positively correlated with WTP for Spanish Cava in the first two rounds. Furthermore, the subject's quality perception of the Cava (*quality_cava*) and the frequency of writing online reviews (*freqwritereview*) were all positively correlated with WTP for Spanish Cava in the latter rounds of the bidding.

Lastly, for the New York sparkling wine, similar to the French Champagne, household income (*inc*) and greater frequency of purchasing wine online (*buywineonline*) had positive impacts on consumer WTP in the first two rounds. In addition, the frequency of drinking New York wine (*freqdrink_nywine*), the frequency of writing online reviews (*freqwritereview*), and consumption of red wine (*cons_red*) were all positively correlated with WTP for New York sparkling wine in the first two rounds. Higher quality perception of NY Finger Lakes sparkling wine was also associated with higher WTP across all four rounds and having written wine reviews (*writewinereview*) and consumption of rose wine (*cons_rose*) are both positively correlated with WTP in latter rounds. Several characteristics were negatively correlated with WTP for New

York sparkling wine in the first two rounds: being married (*married*), being the primary food shopper (*foodshopper*), drinking wine away from home most often (*wheredrink*), and learning about wine through social media (*learn_social*). Furthermore, more frequent wine tastings (*fregtasting*), learning about wine through consumer reviews (*learn_reviews*), consumption of sweet wines (*cons_sweet*), placing greater importance on social media when making decisions (*wt_social*), agreeing with the statement that one rarely comes across a wine they have not heard of (*op_rarenoheard*), and greater objective wine knowledge (*test*) are all negatively correlated with WTP for New York sparkling wine in the latter rounds of bidding.

These results point to some interesting differences across these three sparkling wines in terms of what drives consumer willingness to pay indifferent rounds. While there are some similarities in this regard across wines, the results generally highlight the need for customized marketing strategies for each wine to fully leverage each wine's unique value proposition among consumers. The tobit regression results only provide part of the picture, though; what remains unclear is the *relative importance* of each of these predictors in explaining consumer WTP in totality across all bidding rounds. Such an understanding would provide wine industry professionals with a way to efficiently collect and use information about their customers to refine customer segmentation and more effectively target products to the customers that value them most.

To address this question, we present the results from our random forest regression models. Figures 1, 2, and 3 illustrate the top ten predictors of WTP from the random forest regression models, across all four rounds for the French, Spanish, and U.S. wines, respectively. The metric used to rank predictors is the percent increased mean square error, which is a robust permutation-based variable importance measure for out-of-box (OOB) performance. As we

discussed, while many predictors are statistically significant in the wine-round Tobit models (Table 2), those results do not convey the *importance* of any particular variable, so it is difficult to extract industry and managerial implications. The random forest regression models help us understand which variables are most effective for predicting consumer willingness to pay for each wine. These results can help wine marketers understand what consumer characteristics and habits are most relevant for predicting WTP.

The results illustrated in our figures suggest that the average amount a consumer spends on a bottle of wine (*avgspend*) is one of the most important variables in predicting WTP for all three sparkling wines. Unsurprisingly, age and income were consistently important predictors of WTP across all three wines as well. The frequency of writing online reviews (*freqwritereview*) was also an important predictor across wines. Consumers' own-quality perception of each wine (*quality_champagne*, *quality_cava*, *quality_ny*) played an important role in predicting WTP for each respective wine as well; interestingly, the quality perception of the Spanish Cava was also important in predicting WTP for the French Champagne, suggesting the existence of a cross-quality dependency.

Additionally, the frequency of drinking wine (*freqdrink*) was a very important variable in predicting WTP for the French and U.S. sparkling wines. Each wine has some uniquely important predictors of WTP as well: for the Spanish Cava, a greater likelihood of purchasing a bottle of wine that one has not tried before (*buywine*) was a very important predictor for WTP; and for the U.S. sparkling wine, familiarity with Champagne (*familiar_champagne*) was important in predicting WTP.

The tobit regression results in Table 2 help us better understand how specific predictors affect WTP by round and by wine. However, we feel that the results from the random forest

regressions offer a more holistic view of the importance of key predictors on consumers' WTP, and that these results are more useful to the wine marketing community. The results from the random forest process point to a more concise and mutual set of predictors of consumer WTP, based on relative importance, across all three sparkling wines. While there are several unique predictors of importance for each wine, there is significant overlap in the overall set of important predictors.

Industry and Managerial Implications

Our findings suggest a few key issues that wine producers and marketers should consider in their business decisions. First, consumers' valuation of sparkling wines is impacted most by the average amount they spend on a bottle, their drinking frequency, their age, and their income; these factors are systematically important across all three wines. Second, the perceived quality of wines is an important predictor of consumers' WTP. It is the perceived quality of the wine in question that is the most important consideration, and aside from the French Champagne (that is affected by the perceived quality of both the Cava and the Champagne), there are no spillover effects of perceived quality of other wines impacting the WTP for a given wine.

Our results also shed new light on the demand for a "local" wine in a burgeoning U.S. wine region. For the case of the Finger Lake sparkling wine among consumers in the same region, a greater level of familiarity with both the U.S. wine and the French wine is an important determinant of its WTP. We also observe that the use of social media is an important determinant of subjects' WTP for the local wine, a finding that does not exist for the other two wines. These findings suggest that marketing efforts for the local wine may be best if they focused on customers with experience purchasing European sparkling wines and consumers that engage with social media sources for information about new wines.

More broadly, our results from the random forest regressions can help guide wine marketers and other wine industry professionals in prioritizing consumer demographics, behavioral characteristics, and habits based on their importance in predicting WTP for sparkling wine. The modern consumer is inundated with a barrage of email surveys, customer service phone calls, mailing lists, loyalty programs, and other marketing efforts. Our results point to a few important factors that marketers can easily collect from their clients to help segment their customer base and target their wines accordingly.

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Table 1. Descriptive statistics for subjects in the experiment^a

Variable	Value	N	mean	sd	min	max
WTP	French	476	15.66	11.20	0.00	80.00
	Spanish	476	12.17	8.63	0.00	50.00
	U.S.	476	12.26	8.29	0.00	50.00
age	21-34	48	0.34	0.48	0.00	1.00
	35-44	27	0.19	0.39	0.00	1.00
	45-54	29	0.21	0.41	0.00	1.00
	55-64	33	0.23	0.42	0.00	1.00
	Over 65	4	0.03	0.17	0.00	1.00
education	Associate	15	0.11	0.31	0.00	1.00
	Bachelor	57	0.40	0.49	0.00	1.00
	Doctoral	7	0.05	0.22	0.00	1.00
	High School	5	0.04	0.19	0.00	1.00
	Less than HS	0	0.00	0.00	0.00	0.00
	Master's	42	0.30	0.46	0.00	1.00
	Prof Degree	1	0.01	0.08	0.00	1.00
	Some College	14	0.10	0.30	0.00	1.00
gender	Female	106	0.75	0.43	0.00	1.00
	Male	33	0.23	0.42	0.00	1.00
	No Answer	2	0.01	0.12	0.00	1.00
income	120K-160K	21	0.15	0.36	0.00	1.00
	40K-80K	49	0.35	0.48	0.00	1.00
	80K-120K	44	0.31	0.46	0.00	1.00
	Less than 40K	11	0.08	0.27	0.00	1.00
	Over 160K	9	0.06	0.25	0.00	1.00
	No Answer	7	0.05	0.22	0.00	1.00
marital status	Domestic Partner	12	0.09	0.28	0.00	1.00
	Married	82	0.58	0.50	0.00	1.00
	Single	33	0.23	0.42	0.00	1.00
	Widowed/Divorced	14	0.10	0.30	0.00	1.00
race/ethnicity	Asian	16	0.11	0.32	0.00	1.00
	Black	5	0.04	0.19	0.00	1.00
	Hispanic	1	0.01	0.08	0.00	1.00
	Multiple	9	0.06	0.25	0.00	1.00
	Other	0	0.00	0.00	0.00	0.00
	No Answer	3	0.02	0.14	0.00	1.00
	White	107	0.76	0.43	0.00	1.00

^a The N=476 is the total number of bids from the 119 subjects that fully completed the survey.

Table 2. Significant (at the 5% level) predictors of WTP, by wine and round.

Predictor ^a	French Champagne				Spanish Cava				N.Y. Sparkling Wine			
	<i>Rnd 1</i>	<i>Rnd 2</i>	<i>Rnd 3</i>	<i>Rnd 4</i>	<i>Rnd 1</i>	<i>Rnd 2</i>	<i>Rnd 3</i>	<i>Rnd 4</i>	<i>Rnd 1</i>	<i>Rnd 2</i>	<i>Rnd 3</i>	<i>Rnd 4</i>
age					-	-	-	-			-	
race	+											
inc	+	+							+	+		
married								-	-	-		
foodshopper	-	-	-	-			-		-	-		
buywine			+		+	+		+				
avgspend	+	+			+	+						
wheredrink	-								-	-		
freqdrink_sparkling					+	+					+	
freqdrink_nywine									+	+		
frequsting											-	-
familiar_champagne								-				
familiar_cava		+										
quality_champagne			+	+								
quality_cava							+	+				
quality_ny									+	+	+	+
freqwritereview						+	+	+	+	+		
buywineonline	+	+							+	+		
writewinereview											+	+
learn_rec			-	-								
learn_ad	+	+	+		+	+	+	+	+	+		+
learn_specwebsite							+					
learn_mag							-		-	-		
learn_social					-				-	-		
learn_reviews											-	-
cons_red			+	+	+	+			+	+		
cons_rose											+	+
cons_sweet											-	-
cons_sparkling	+							+		+		
cons_fruit	-											
wt_consrec	-											
wt_social		-	-	-		-					-	-
op_knowledgeable	+	+	+	+			+		+	+	+	+
op_expert	-	-	-	-	-	-			-	-	-	-
op_rarenoheard			-	-							-	-
op_heardmostnew			+	+								
test		-				-					-	-
fr_finished	+	+				+						
N	119	119	119	119	119	119	119	119	119	119	119	119

^a See Appendix B for variable definitions.

Note: The dependent variable is WTP. Each column represents a separate Tobit regression. “+” and “-” indicate positive and negative coefficient estimates, respectively, that are statistically significant at the 5% level.

Figure 1. Random forest results for WTP, French wine, Rounds 1 through 4.

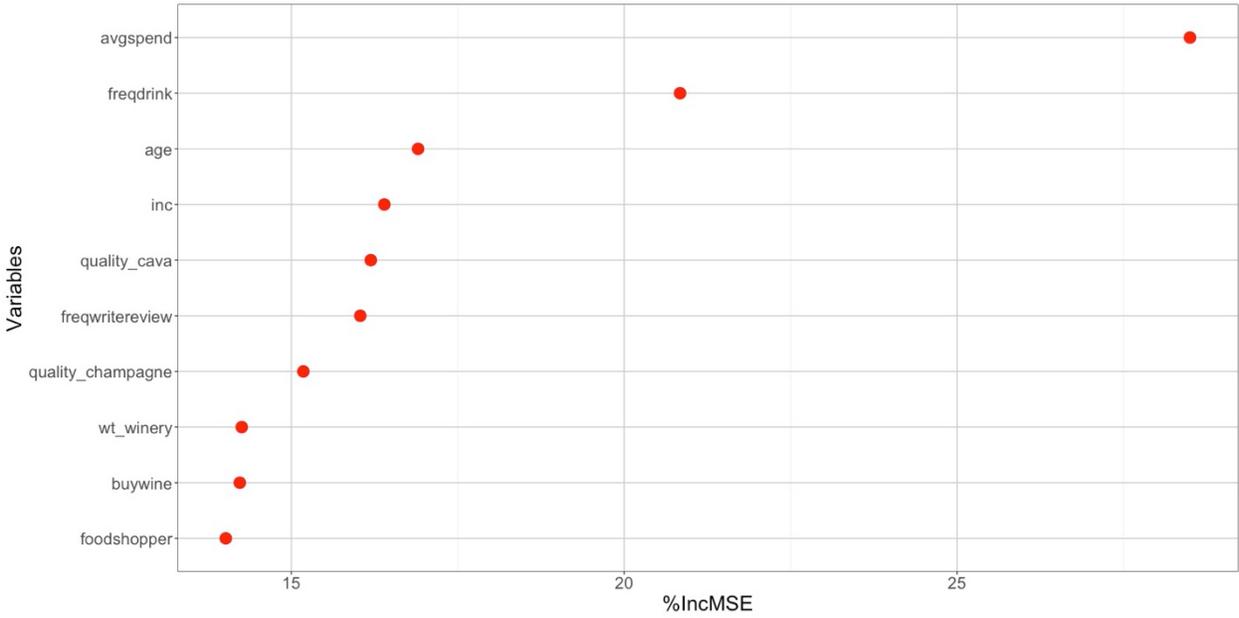


Figure 2. Random forest results for WTP, Spanish wine, Rounds 1 through 4.

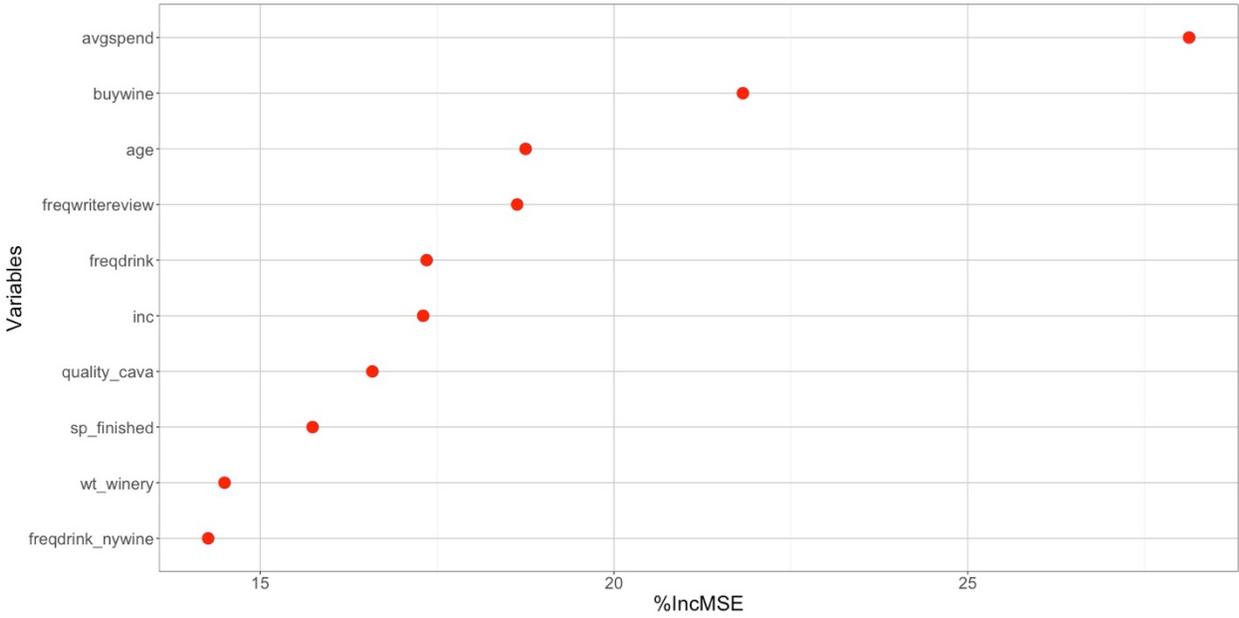
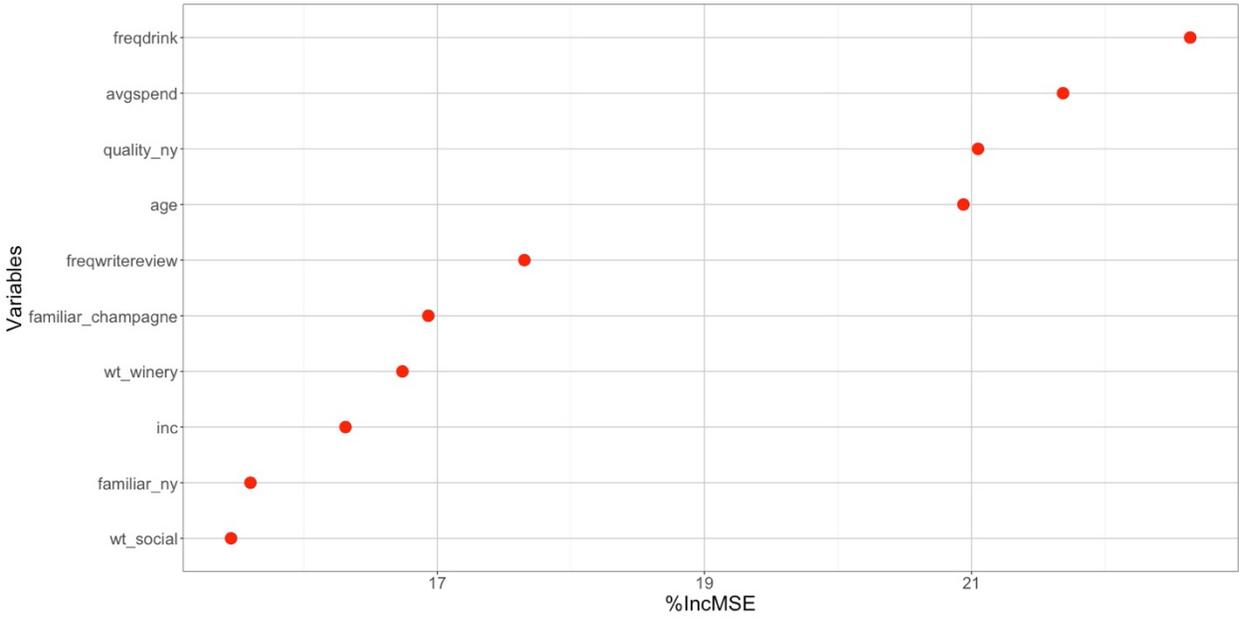


Figure 3. Random forest results for WTP, U.S. wine, Rounds 1 through 4.



Appendix A. Expert review information provided to subjects in Round 4.

Country	<i>France</i>	<i>Spain</i>	<i>U.S.</i>
Wine	Champagne	Cava	Finger Lakes, NY
Wine Spectator rating (out of 100)	88	88	88
Wine Spectator tasting notes	A mouthwatering Champagne, with a lacy mousse and a lively mix of Honeycrisp apple, nectarine, Marcona almond and chalk flavors. Subtle finish.	A spool of fragrant ground spice and jasmine unwinds through this vibrant Cava. The satiny mousse carries flavors of baked quince, biscuit and Meyer lemon, backed by zesty acidity.	A fresh, floral sparkler, with good energy to the star fruit, yellow apple and honeysuckle notes that stream through.

Appendix B. Predictor variable definitions.

<i>Predictor</i>	<i>Definition / Survey Question</i>
age	age in years
race	race: 1="white non-Hispanic", 2="black", 3="other"
inc	income: 1=Less than 40K, 2="40K-80K", 3="80K-120K", 4="120K-160K", 5="Over 160K"
married	marital status: 1="married"
foodshopper	primary food shopper 0/1
buywine	how likely are you to purchase a bottle of wine that you have not tried before? 1="Not at all likely", 2="Not very likely", 3="Somewhat likely", 4="Likely", 5="Very likely"
avgspend	what do you usually spend for a regular (750 mL) bottle of wine? 1=less than \$10, 2=\$10-\$15, 3=\$15-\$20, 4=\$20-25, 5=\$25-30, 6=more than \$30
wheredrink	where do you most often drink wine? 1=home, 2=restaurant, 3=bar/club, 4=party, 5=other
freqdrink_sparkling	how frequently do you drink sparkling wine? 0=never, 1=couple times per year, 2=1 time per month, 3=2-3 times per month, 4=1 time per week, 5=more than once a week, 6=daily
freqdrink_nywine	how frequently do you drink New York wine? same scale as freqdrink_sparkling
freqtasting	how frequently do you go to wine tastings? 0=never, 1=once per year, 2=2-3 times per year, 3=once per month, 4=2-3 times per month, 5=once per week or more
familiar_champagne	familiarity with champagne: 1="Not familiar", 2="A little familiar", 3="Somewhat familiar", 4="Pretty familiar", 5="Very familiar"
familiar_cava	familiarity with cava: same scale as familiar_champagne
quality_champagne	quality perception of champagne: 1="Low quality", 2="Medium-low quality", 3="Average quality", 4="Medium-high quality", 5="High quality"
quality_cava	quality perception of cava: same scale as quality_champagne
quality_ny	quality perception of NY Finger Lakes sparkling: same scale as quality_champagne
freqwritereview	how frequently do you WRITE online reviews? 0="Never", 1="Almost never", 2="Sometimes", 3="Most of the time", 4="Always"
buywineonline	do you buy wine online? 0=no, 1=once or twice, 2=several times, 3=frequently, 4=other
writewinereview	have you ever written online review for WINE? 0=no, 1=yes
learn_rec	learn about wine through friend/family recommendation 0/1
learn_ad	learn about wine through ads 0/1
learn_specwebsite	learn about wine through specialized website 0/1
learn_mag	learn about wine through wine magazines 0/1
learn_social	learn about wine through social media /app 0/1
learn_reviews	learn about wine through consumer reviews 0/1
cons_red	consume red wine 0/1
cons_rose	consume rose 0/1
cons_sweet	consume sweet wine 0/1
cons_sparkling	consume sparkling wine 0/1
cons_fruit	consume fruit-based wines 0/1
wt_consrec	how important is online consumer recommendation? 1=not important at all, 2=slightly important, 3=moderately important, 4=very important, 5=extremely important
wt_social	how important is social media? same scale as wt_consrec
op_knowledgeable	feel quite knowledgeable about wine. 1=strongly disagree, 2=somewhat disagree, 3=neither agree nor disagree, 4=somewhat agree, 5=strongly agree
op_expert	I am one of the wine experts among friends. same scale as op_knowledgeable
op_rarenoheard	rarely come across wine I haven't heard of. same scale as op_knowledgeable
op_heardmostnew	I have heard about most new wines. same scale as op_knowledgeable
test	test score (0-3) on objective wine knowledge questions; total possible points = 3
fr_finished	participant finished the glass of French Champagne in tasting 0/1