

## Ithaca 2018 Abstract Submission

### Title

Mid-Atlantic Wine Tourism Consumer Preference: An Econometric Approach

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### Keywords

wine tourism, Mid-Atlantic, logistic regression, survey study, consumer behavior, target market

### Research Question

Who is the primary market of Mid-Atlantic wine tourism? What characteristics do they have and how the wineries can reach them?

### Methods

A consumer survey with 977 samples (administered on 22-24 October 2014) was analyzed using logistic regression model and descriptive statistics.

### Results

Males who are more than 24 years old are more interested in wine tourism. Winery tasting staff, wine magazines, and regional or local magazines are media to reach them.

### Abstract

Mid-Atlantic Wine Tourism Consumer Preference: An Econometric Approach

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## Introduction

Wine tourism is a special form of agritourism (Gold and Thompson, 2011; Wicks and Merrett, 2003), during which participants can taste wine, evaluate the quality, and make immediate purchasing decisions based on their experience and preference. Thus, the risk in purchasing wine with attributes that they do not like is greatly eliminated (Speed, 1998; Lockshin and Hall, 2010). Winery and vineyard tours also enable wine tourists to understand and appreciate the unique cultural and geographical attributes of a winery (Assembly of European Wine Regions, 2015). Therefore, wine tourists can acquire knowledge and have related experiences as well as build relationships with other wine drinkers during their visit (Shor and Mansfeld, 2009).

Despite the enormous benefits brought by wine tourism activities, few studies focusing on the Mid-Atlantic Region of the United States have been conducted. The Mid-Atlantic Region is undergoing rapid development. According to the New Jersey Center for Wine Research and Education (2017), the number of New Jersey and Pennsylvania wineries doubled in the last 10 years while the acreage of wine grape production increased by 4 times for New Jersey and 2 times for Pennsylvania. (Dombrosky and Gajanan, 2013). According to the Alcohol and Tobacco Tax and Trade Bureau, Department of The Treasury (2016), in 2015, the Mid-Atlantic states (New York, New Jersey, and Pennsylvania) accounted for 6.2% of the total bulk wine and 9.3% of the bottled wine production. In addition to this rapid growth, the three states also have geographical advantages such as access to densely-populated metropolitan areas like New York City and Philadelphia (Mackun and Wilson, 2011). The size of population promises the size of local markets.

Knowing that the Mid-Atlantic region has a high market potential, we focused on better understanding the local markets. This study was designed to identify the characteristics of wine consumers who are interested in vineyard tours. Unlike past studies, we investigated a broader range of wine consumers who resided in the New York, New Jersey, and Pennsylvania rather than target visitors at select wineries. This study serves to help wine industry members in the Mid-Atlantic region understand their target audience and develop their business strategies accordingly.

## Methodology

### Data Source

A 15-minute Internet survey is designed by Pennsylvania State University and distributed from 22-24 October 2014. The survey is administered to Survey Sampling International, LLC (Shelton, CT) panelists who resided in New Jersey, New York, and Pennsylvania. Before the survey was released, it was pre-tested on a subset ( $n=98$ ) of the target consumers. Before participating, all panelists were screened for qualification. We excluded wine industry members and those who were less than 21 years of age. Participants were also screened for having purchased and drunk wine at least once within the previous year. Of the 1,280 participants who opened and attempted the survey, 977 qualified and completed the questionnaire.

### Logistic Regression Model

In this study, we investigated the impact of consumer characteristics on the likelihood for a consumer to be interested in wine and vineyard tours. Selecting Tour, a binary variable as our dependent variable, we explicitly use logistic regression model as our primary analytical tool to investigate how each independent variable affects the probability of a consumer being interested in winery or vineyard tours.

The dependent variable, Tour, is a binary variable which indicates whether a consumer is interested in winery or vineyard tours. Based on the objectives and previous studies, five groups of independent variables are selected. The groups are: demographics ("Demographics"), wine consuming occasions ("Occasion"), sources of wine knowledge ("Knowledge"), wine purchasing and drinking behaviors ("Behaviors"), and past experience with a New Jersey, New York, or a Pennsylvania winery ("Experience"). Group "Demographics" includes gender, age, income, marital status, the level of education, and primary residency of a respondent. Category "Knowledge" is used in place of the level of wine knowledge. Category "Behaviors" covers a range of different purchasing behaviors of a respondent. Variable Purchase indicates the occasions when wine purchases are made for households. Bottle and Type are two variables which indicate the percentage of purchases that are made in different bottle sizes and in different wine types (red, white, and rosé). Wine drinking frequency (Frequency) of a respondent is also included in the "Behaviors" category. In addition, an interaction term between variable Purchase and one variable (which represents whether a consumer drinks wine as an everyday beverage) from group "Occasion" is also created to eliminate collinearity between the two variables.

$$\ln\left(\frac{P_{\text{TOUR}}}{1-P_{\text{TOUR}}}\right) = \alpha + \delta_1 \text{ Gender} + \delta_2 \text{ Age} + \delta_3 \text{ Income} + \delta_4 \text{ Marital Status} + \delta_5 \text{ Education} + \delta_6 \text{ Residency} + \sigma \text{ Occasion} + \gamma \text{ Knowledge} + \beta_1 \text{ Purchase} + \beta_2 \text{ Bottle} + \beta_3 \text{ Type} + \beta_1 \text{ Donation} + \beta_1 \text{ Frequency} + \theta \text{ Purchase} \times \text{Occasion} + \varepsilon \text{ Experience} + \mu$$

## Results

### Participant Profile

Of the 977 participants who met the criteria and completed the survey, responses to demographic questions included: 62% were female, with a nearly equal distribution among age ranges. Most respondents resided in New York (48%), and, of those who provided a response to the question regarding marital status, 60% were married or in a partnership. When answering the question regarding their level of education and household income, 39% (n=972) had a bachelor's degree and 18% had a master's degree or above, while more than half of the participants had an annual household income of less than \$76,000 (n=971). Of the 949 participants who responded to the question regarding interest in participating in winery or vineyard tours, which is the dependent variable for our model, 61% would be interested in these activities.

Before our logistic regression analysis, we profiled the respondents who were interested in wine tourism.

Demographic categories with the greatest number of participants selected were: female (61%, n=577), married or in a partnership (62%, n=575), New York residency (49%, n=577), having a bachelor's degree (40%, n=576) or a master's degree or higher (18.2%). Regarding age range and household income, the distribution was fairly even among the categories presented.

### Winery and Vineyard Tour Participation Likelihood

Our logistic regression model showed that males tended to be more interested in taking a tour around a winery or a vineyard, possibly because more males tend to have higher involvement with wine where there were 56% of males were super cores in our survey data compared to 44% of females (Fotopoulos et al. 2002; Gjonbalaj et al. 2009). Young individuals (21 to 24 years old) were less likely to be interested in winery or vineyard tours, which agrees with Mitchell, Hall, and McIntosh (2000). We could not draw any conclusion for the effect of educational levels that are higher than an associate degree because the variable that represents this category was not significant. Consumers with an associate degree were less likely to be interested in wine tourism compared to those who has a lower educational level (may because of the insignificant variable that represents having a bachelor's degree or above). This result agrees with Govindasamy and Kelley (2014).

In addition, all sources that participants used to obtain information about wine had significant and positive relationships with an interest in winery tours except for two sources: newspaper and TV/radio. Newspaper had a negative relationship most likely probably due to its less popularity compared to wine magazines among Mid-Atlantic wine drinkers when they acquire wine knowledge, different from the case of agritourism where newspaper is used as one of the primary source to learn about the activities (Govindasamy and Kelley, 2014). Winery tasting staff, wine magazines, and regional or local magazines were the top three influences on the likelihood of a participant being interested in winery tourism, may because the first two are strongly associated with wine and the last one is associated with local activities. All occasional variables are positively significant suggesting everyday wine and gift wines are preferred by markets. Consumers with previous winery tourism experience also showed a greater likelihood to be interested in future winery and vineyard tourism. Consumers were more likely to be interested in winery tourism if they purchased everyday wine and wine for special occasions, suggesting the market potential in the long-term.

### Conclusion

Wine businesses, especially those in Mid-Atlantic regions, should consider incorporate results from our findings in their business models. Results based on demographic characteristics suggest Mid-Atlantic wineries should target older (>24 years old) males. Winery tasting room staff were our participants' primary source of wine information, which should encourage owners and operators to educate their staff so that they can then pass this knowledge to visitors. Wine magazines and local magazines were also identified as good platforms for winery and vineyard tour advertisements. In terms of product design, everyday wine and wines for gifts should be emphasized on, while providing gift wraps might also be helpful. Since a lot of the consumers purchase both everyday wine and for special occasions, local wineries can promote both types of wines through a long-term relationship with the consumers.