Millennials' perceptions to environmentally responsible winery practices: An exploratory study

Linda Nowak, Sandra Newton and Armand Gilinsky

Contact: linda.nowak@sonoma.edu

The purpose of this exploratory study is to ascertain the existence and strength of the relationship between environmentally responsible winery practices and Millennials' perceptions. A methodology for grouping participants based on winery website information and gender is developed. Five hypotheses regarding brand perceptions are tested via website evaluations using a survey instrument. Preliminary results from 149 Millennials indicate that perceptions about product quality, consumer trust, and brand equity are positively related to perceived web site quality. Positive expectations regarding a winery's environmental practices appear to increase Millennials' purchase intentions.

Key Words: Wine Marketing, Brand Equity, Millennial Consumers, E-Commerce, Environmental Responsibility

Introduction

In the global marketplace of wine, how does a wine brand differentiate itself from the competition? As profit margins shrink due to intensifying competition and unfavorable economic and trading conditions, each winery must make strategic choices about differentiating itself in a crowded market. Many rivals attempt to distinguish themselves via superior product quality, awards, origin or appellation, and overall image. Some try to capitalize upon community involvement and charitable giving. Some are using an emerging differentiation strategy encompassing organic and pro-environmental practices that are said to be incurring incremental production costs (Storchmann, 2008).

Many U.S. wineries have developed web sites in an effort to build a customer base and to encourage consumers to visit the tasting room or buy direct. Tapscott (1998) emphasizes that the Millennial generation, i.e., those born between 1977 and 1999, is the first group of consumers to grow up immersed in a digital and Internet-driven world. Millennial consumers evince a high comfort level with respect to gathering information from the web (Lancaster and Stillman, 2002; Jayson, 2006). In the U.S., Millennial consumers are the largest by population, 76 million, and have annual incomes approximating \$211 billion (Harris Interactive, 2001). Millennials are therefore an important and emerging demographic target market for the wine industry; recent wine consumption growth in the U.S. has been attributed in part to the Millennials (Saad, 2005; Wine Market Council, 2008). According to Adams (2004), Millennials grew up with organic foods and are a powerful force in shaping trends for food and beverage manufacturers. Are Millennial consumer reactions likely to be more favorable to those wineries professing to be environmentally friendly (e.g., organic, biodynamic, eco-friendly, sustainable) than to those who do not promote themselves as such?

We now turn to a brief review of the literature on consumer trust, brand equity, purchase intentions, environmental benefits, and gender differences in purchase decisions based on perceptions of social responsibility. This is followed by the development of five hypotheses for testing. We then turn to the selection and composition of a sample of Millennial wine consumers, followed by an innovative method for grouping respondents based on type of website under evaluation. Results from hypothesis testing are presented and discussed. We close with preliminary observations and suggestions for further research, noting implications for wine businesses marketing managers.

RELEVANT RESEARCH ORIENTATIONS

How does a winery catch the attention and then win the hearts of consumers? Building a strong relationship with consumers requires: (1) understanding their shopping patterns, attitudes and beliefs, and buying behaviors, and (2) responding to those behaviors. By understanding wine consumers' attitudes, wineries may learn to meet customers' expectations for the type of business practices that lead to positive word of mouth, wine club membership longevity, and repeat purchases. Wine quality, service, and overall wine country experience are positively related to brand building (Getz, Dowling, Carlsen, and Anderson, 1999). Consumer perceptions of wine quality coupled with perceived value are positively related to consumer trust (Nowak and Washburn, 2002). Aaker (1991, 1996) describes brand equity as brand loyalty, brand awareness, perceived quality, brand associations, and other specific brand assets. Brand equity is alternatively described as the "incremental value added to a product because of its brand name" (Farguhar, 1994). Brand equity can increase cash flow to the firm because of consumer loyalty (Simon and Sullivan, 1993) and create competitive advantages based on non-price competition (Aaker, 1991). Its value may be reflected in higher prices that customers are willing to pay for a particular brand, or via a commitment toward a brand that is difficult to articulate in measurable terms. Wine quality, trust in the winery, service quality, and fair pricing are significant contributors to a winery's brand equity (Nowak and Washburn, 2002; Nowak, Thach and Olsen, 2006). In the process of "doing something good for the environment," wineries may increase awareness for wine brands and

build intangible assets such as brand equity, employee commitment, and trust or goodwill among opinion leaders and decision makers (Meenaghan, 2001). Pro-environmental winery practices may also positively affect the image of the winery and its wines. For example, involvement in the arts such as ballet or classical music has been found to be an effective way to transfer this "sophisticated" image to the sponsor (Meenaghan and Shipley, 1999). Perceptions of a winery's web site quality, and expected consequences of the winery's pro-environmental actions are hypothesized to be predictors of increased brand equity and increased purchase intentions (see Table 1 for a summary of the literature on these topics). The research framework above lends support for the proposed hypotheses, which are outlined in Table 2 in the Results section.

Table 1. Summary of the literature used to develop hypotheses

Independent variables	Dependent variables	Authors		
Consumer Trust	Stakeholder relationships	Young, 1995		
	Buyer-seller relationships	Schurr and Ozanne, 1985; Dwyer, Schurr, and Oh, 1987		
	Commitment formation	Achrol, 1991; Morgan and Hunt, 1994		
	Services marketing	Berry and Parasuraman, 1991		
	Intra-organizational relations	Moorman, Zaltman, and Deshpande 1992		
	Pro-environmental decisions	Hosmer, 1994		
	Adoption of social causes	Osterhus, 1997; Nowak, Fucciolo, and Ponsford, 2000		
	Source credibility	Ottman 1992; Stisser 1994; Thorson, Page, and Moore, 1995		
	Website design	Lynch and Horton, 2002; Everard and Galletta, 2006		
Brand Equity	Pro-environmental practices	Meenaghan, 2001		
	Community support for the arts	Meenaghan and Shipley, 1999		
	Visible use of product or service	Lemon, Rust, and Zeithaml, 2001		
	Loyalty and purchase behavior	Nowak and Washburn, 2002		
Purchase Intentions	Satisfaction with winery visit	Nowak and Newton, 2006		
	Web site quality	Nowak and Newton, 2008		
	Impact on environment	Nielsen Company, 2008		
	Millennials and organic foods	Adams, 2004		
Environmental vs. Economic Benefit	Costs outweigh behavior change	Osterhus, 1997; Schwartz, 1977; Rangan, Karim, and Sandberg 1996		
	Price, quality, and convenience	Ottman 1992; Roberts 1996a		
	Consumer ability to change	Roberts 1996b		
	Consumer price sensitivity	Nielsen Company, 2008		
Gender differences	Socially responsible consumers	Roper Organization, 1992		

Cause-related marketing by small firms	Nowak, Fucciolo, and Ponsford, 2000
"Green" food and drink purchase behavior	Full Glass Research, 2007

METHODOLOGY

A convenience sample of one hundred and fifty undergraduate and graduate students of a public university in northern California participated. Participants, Millennials, who are typically adept with maneuvering around the World Wide Web on a routine basis, were given a two-page printout of winery web pages, asked to read the information carefully, and then fill out a questionnaire evaluating the winery web site on the variables of interest. Participants also provided demographic information: age, gender, and approximate number of wineries they had visited in their lifetime.

Four different sets of winery web pages were randomly distributed to participants. Group 1 received the homepage of a well-known local winery, and the pages contained information about its sustainable growing and wine making practices. Group 2 received the home page of the same well-known local winery; however, this time the pages did not mention sustainable business practices, but instead listed upcoming concerts and events. Group 3 received the same homepage as Group 1, with the name of the winery removed and an "unknown" winery name inserted in its place, and pages contained information about sustainable growing and wine making practices. Group 4 received the same home page as Group 2, but again with the "unknown" winery name, and the pages did not mention sustainable business practices, but instead listed upcoming concerts and events.

One questionnaire was incomplete, and was removed from the analysis, leaving Group 1 with 38 respondents, Group 2 with 36, Group 3 with 37, and Group 4 with 38, for a total number of 149 valid responses from a sample of 150. Average age of each group was 22 years old and each group was balanced between males and females. The number of previous winery visits ranged from 0 to 100, and the average number of visits was 6.82.

RESULTS

SPSS 17.0 was used to analyze the data and test the hypotheses. Exploratory factor analysis was conducted using promax rotation with results of with high loadings on hypothesized factors and low cross-loadings. The overall factor solution for the seven factors explains 78% of the variation. Items measuring each construct were adapted from existing scales where possible and developed based on previous literature. The items to each construct, the author(s) of the items, and the construct reliability scores, which ranged from a Cronbach's alpha of 0.75 to 0.92, are listed in the Appendix. Intercorrelations between the constructs using Pearson Correlations ranged from -0 to .556.

Results from the hypothesis tests are summarized in Table 2; alpha cutoff α = .10 was used in the analyses.

Table 2. Hypotheses summary

Hypothesis	Results	
H1a: Increased perceptions of web site quality will lead to increased levels of trust and increased levels of perceptions of product quality.		
H1b: Positive evaluations of the winery's web site will lead to increased brand equity.		
H2: Positive evaluations of the winery's pro-environmental business policies will lead to	Not	
increased brand equity for the winery.	Supported	

H3: Wineries that profess their sustainability practices on their web sites will have higher levels of purchase intentions than wineries that do not supply this information.		
H4: Consumers who believe that the winery's pro-environmental business practices will make a difference will have increased purchase intentions.		
H5a: Gender will be a predictor of brand equity for a winery that adopts pro- environmental policies.	Supported	
H5b: Gender will be a predictor of purchase intentions for a winery that adopts proenvironmental policies.	Supported	

The four omnibus MANOVA test statistics were significant with an F-Statistic = 2007.868 and Sig. = .000, validating support for H1a. Its univariate tests were conducted for the dependent variable, trust; it was significant at (F-Statistic 3.626, Sig. = .016, but the dependent variable, product quality was not significant (F-Statistic 1.371, Sig. = .256). Analysis of variance (ANOVA) or regression analyses were conducted to test the remaining hypotheses. For Hypothesis 1b, the model was found significant with F-Statistic 3.020, Sig. = .000, explaining 20.6% of the variance in the model (Adjusted R²) offering support for H1b. For H2, the model was found not significant with F-Statistic .907, Sig. = .439; H2 was not supported. For H3, the model was found significant with F-Statistic 3.259, Sig. = .023 with an Adjusted R² = 4.4% offering support for H3. For H4, purchase intentions as the dependent variable and consequences of the company's actions, and a dummy variable for the groups were entered as main effects independent variables. Here the model was significant with an F-Statistic 2.004, Sig. = .006 with an Adjusted R² = 15%, offering support for H4.

For H5a with brand equity as the dependent variable and gender, a dummy variable for the groups, and interaction effects between the dummy variable and gender entered as the independent variables, the test was significant with F-Statistic 1.818, Sig. = .088 with an Adjusted $R^2 = 3.7\%$ offering support for H5a. For H5b with purchase intentions as the dependent variable and gender, a dummy variable for the groups, and interaction effects between the dummy variable and gender entered as the independent variables. Here the test was significant with F-Statistic 2.617, Sig. = .014 with an Adjusted $R^2 = 7.1\%$ offering support for H5b.

The estimated marginal means of dependent variables product quality, trust, brand equity, and purchase intentions are plotted for the four groups to visually depict the differences found in their respective analyses and are shown in Figure 1. Hypothesis 5a and 5b tested gender as predictor of dependent variables brand equity and purchase intentions; the estimated marginal means are plotted for the four groups and males and females to visually depict the differences found in their respective analyses and are shown in Figure 2.

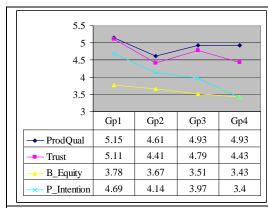




Figure 1. Estimated marginal means for Figure 2. Gender (F,M)*Group (1,2,3,4) means for

each group	for	dependent	variables	of	H1-
H4					

dependent variables brand equity and purchase intentions

DISCUSSION AND MANAGERIAL IMPLICATIONS

Trust in e-commerce sites is found to center around the consumer's willingness to transact with an on-line business, as well as their assessment of the business' trustworthiness (McKnight, Choudhury, and Kacmar, 2002). All web site and customer relationship management systems that interface with the customer are critical. Successful organizations "realize that every interaction with the customer can make or break the relationship" (Brown, 2003); consequently, the winery's web site can be an important extension to the winery's tasting room with the customer, whether prior to the visit, or for continual use for ordering wine and asking questions.

By grouping participants, Millennial consumers, based on winery website information, this exploratory study identifies and measures their reactions to winery web sites used to promote organic and sustainable business practices and evaluates their impact on purchasing intentions. Using undergraduate and graduate students in a convenience sample must be addressed as a limitation; however, the participants are Millennials, who routinely access the World Wide Web and are comfortable with the technology. Five hypotheses regarding brand perceptions are tested via website evaluations using a survey instrument; of those hypotheses, four are fully supported and one is partially supported. Preliminary results from a sample of 149 Millennials indicate that perceptions about product quality, consumer trust, and brand equity are positively related to perceived web site quality. Positive expectations regarding a winery's environmental practices appear to increase Millennials' purchase intentions, but not their brand equity. Sustainable growing practices, be these organic or biodynamic, may be justifiable from an environmentalist's point-of-view. From a marketing perspective, however, the jury is still out on the efficacy of promoting environmental responsibility as a differentiator or even a justification for charging a price premium in a crowded market for wine, thus many wineries that do adopt environmentally responsible activities may be reticent to publicize these practices.

Gender is a moderating variable in that females tend to rate environmental responsibility more highly than do males for each of the five dimensions. A future study incorporating a more robust sample size, perhaps using respondent pools other than university students or including participants from other demographic groups such as Baby Boomers (1946-1964) may be necessary in order to perform more sophisticated statistical tests. Another methodological issue measuring tendencies towards environmental responsibility from representations made on Internet-based promotional materials.

Wine marketing executives may interpret these preliminary results in terms of building a rationale for adding information to their websites regarding their company's environmental practices, or even further as a justification for incorporating environmental stewardship in all aspects of the production, operations, and marketing mix. Environmentally-aware consumers in the U.S. have boosted purchases of wines made from organic grapes by about 14-17 percent per year since 2004 (Gleason, 2006), and sales of wines made from organic grapes were reported at the 2009 Unified Wine & Grape Symposium to have grown by as much as 30 percent in 2008. Recent studies in wine economics and articles about wine and food marketing have shown that eco-labeling wine as "made from organic grapes" may only be effective if consumers are willing to pay a price premium for green products (Will, 2008). Others have shown that consumer values of wine eco-labels with respect to personal benefits such as improved wine quality and health have not yet been proven (Delmas and Grant, 2008). Eco-labels for wine — such as Organic Wine or made from Organic Grapes — are relatively new and consumers do not always understand the actual meaning behind those labels.

Finally, wine business professionals seem reluctant to allocate time and money to an activity that is not known to be associated with any specific market or performance gain. "Consumers love the

idea of bio and organic, but they are not buying wine because it is more environmentally friendly, be it the carbon footprint, because of packaging or organic farming. What motivates consumers is taste and reputation," says Jonathan Newman, former chairman of the Pennsylvania Liquor Control Board, the largest single wine buyer in the United States (Voss and Buckley, 2008, pg 38). Yet many wineries are starting to follow their conscience and develop sustainable practices. For example, Benziger Family Winery's web site educates the reader on its sustainable business practices, a water recycling program, the use of solar power, and stringent vendor requirements. Finally, according to Ann Thrupp, sustainability manager at Fetzer and Bonterra in California, "We are and want to be seen as an industry ahead of the game, as good stewards" (Voss and Buckley, 2008: 34).

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¹ As of this writing, 83 wineries in California had already switched to solar energy (75% in Napa and Sonoma counties); many California wineries were in the process of certifying products and vineyards as organic and/or biodynamic. By October 2006, more than 1,100 wineries and vineyards participated in the Sustainable Winegrowing Program, according to the California Sustainable Winegrowers Alliance/Wine Institute. A total of 807 vineyard enterprises had submitted self-assessment results to the SWP program, representing 152,799 acres, or about 30% of total statewide acres. A total of 107 winery enterprises submitted self-assessment results, representing 42% of total statewide case production. Today, wine enthusiasts buy nearly twice as much organic wine as they did in 2003. U.S. sales of certified organic wine and those made with organic grapes reached \$80 million in 2006, and nearly \$130 million in 2008, rising 28% since 2004, according to the Organic Trade Association (OTA).

² See http://www.benziger.com/.

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Appendix. Measurement Items and Scale Reliabilities Results

Appendix. Measurement Items and Scale Reliabilities Results	1
Construct with Measurement Items*	Alpha
Web site Quality (Yoo and Donthu 2001)	.86
The web site is of high quality.	
This web site appears to be of very poor quality.(R)	
The overall quality of this web site is excellent.	
Fair Pricing (Nowak and Washburn 2002)	.75
These wines appear to be competitively priced.	
These wines are a good value for the price.	
I perceive these wines to be fairly prices.	
Product Quality (Nowak and Newton, 2006)	.75
Overall, I consider the quality of the wine to be excellent.	
I believe that the general quality of the wine is low. I	
I would expect the quality of the wine to be generally very poorexcellent.	
Trust (Jarvenpaa and Tractinsky 1999)	.83
This winery seems trustworthy.	
This winery wants to be known as one who keeps its word.	
I trust this winery to keep my best interests in mind.	
Brand Equity (Yoo and Donthu 1997)	.80
This winery would be my first choice.	
Even if another winery has the same offerings as this winery, I would prefer to purchase	
from this winery.	
It makes sense to buy from this winery instead of any other winery, even if their wines are	
essentially the same.	
If there is another winery as good as this one, I would still prefer to buy from this winery.	
Consequences of Company's Actions (Osterhus 1997)	.92
This company helps the environment.	
Buying products from this company helps protect the environment.	
Currently, this company is effective in its efforts to help protect the environment.	
Company's growing techniques will have a positive impact on the environment.	
Purchase Intention (Oliver, Rust, and Varki 1997)	.87
In the future, what is the likelihood that you would purchase this wine? Very unlikelyVery	
likely	
In the future, what is the likelihood that you would purchase this wine in a store or	
restaurant? Not possibleVery possible.	
In the future, how would you rate your chances of visiting this winery? Certain not to	
goCertain to go.	
*Items averaged to create the variables used in the analysis	1
The state of the s	