

DO AUSTRALIAN WINE CONSUMERS VALUE ORGANIC WINE?

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Abstract

Eco-friendly products are gaining in popularity, and at present various claims are being used to attract the 'green' consumer. In the food and beverage industry, many official and private stickers touting the purity of the food or beverage compete as a cue with the aim of attracting both core and peripheral green consumers. "Organic" is one of these claims. Many studies have been conducted around the world to describe *the* organic consumer, his willingness to pay for organic products, and his motives to purchase such products. However, there is very little about organic wine consumers.

This paper explores the importance that is given to the organic attribute by Australian wine consumers compared to three others: price, region of origin and another eco-friendly claim. A choice experiment has been used to test the importance and the utility attached to each level of each attribute. The results indicate that organic, as an attribute, is valued very little by the 'average' Australian wine consumer. However, a segmentation analysis revealed that a minority of wine consumers do value eco-friendly wines and are willing to pay a price premium of \$4.99 when buying wines above \$12.50. Implications for wine producers and recommendations for future research are provided.

Introduction

In the last decade much growth has occurred in the market for organic products. The consumer demand for safer, better quality, and healthier foods has helped spur this expansion. Findings regarding the size of the organic market have produced conflicting answers, but the global worth of the organic market was estimated at about US\$20 billion in 2002 (Hughner *et al.*, 2007). However, the size of the global organic wine market is still unknown. A recent survey from Wine Intelligence (Halstead, 2007) showed that only 11% of UK regular wine drinkers purchased (an) organic wine(s) in the last 3 months. A comment by one respondent may reflect the problem and challenge faced by the organic wine industry: '*Organic: I think food, I don't think wine*'.

This statement is also representative of the number of publications focusing on the topic. We reviewed more than 60 articles published about organic food consumers in the last two decades with the aim of better understanding their behaviour, their motives and the willingness to pay (WTP) for such products. However, very few articles have focused on organic wine consumers and his/her WTP for organic wines, and these papers have some limitations.

The aim of this article is to fill the gap in the literature by investigating Australian wine consumers and their willingness to value organic wine using a choice experiment approach. The first section is dedicated to the review of the existing literature on organic products, aiming to better understand the organic food and wine consumer. The second section of the article describes the research method, followed by the findings of the survey. A discussion of these findings is then provided in section four as well as the implications that follow.

Literature review

Organic: Definition & Trends

According to Siderer *et al.* (2005), the increasing demand for organic products stems from the recent food crises, including mad cow disease, the foot in mouth epidemic and the Belgian dioxin scandal. Consumers, especially in Europe where such diseases struck hardest, have partially lost their

confidence in conventional farming methods. Similarly, in the wine market, environmental quality perceptions seem to play a critical role in consumer preference (Loureiro, 2003).

Although the organic market is growing and environmental issues in the media are prevalent, there still exists confusion surrounding the term 'organic' (Crescimanno et al., 2002; Thogersen, 2006). The meaning of 'organic' changes depending on the country and its associated regulations. While many consumers have heard the term 'organic', many are unaware of its central features (Crescimanno, et al., 2002). This is similar to other food terms such as 'cage free' and 'natural' which have shown a tendency towards consumer confusion (Hughner et al., 2007).

'Organic' in general essentially describes the farming practices used, which refers to a system using organic manure which largely excludes synthetic fertilizers, pesticides, chemicals or growth promoters of any type, including hormones and antibiotics (Gil et al., 2000). More confusing, the definition of organic wine has a slightly different definition. "Organic wine is made from grapes which are not only farmed organically, but also processed in accordance with the standards of organic winemaking practices. (...) The maximum level of sulphur dioxide in organic wines is half of other wines" (Iland and Gago, 2002).

Various attitudinal studies indicate that the potential market for organic products is large, that is, people say that they intend to or want to buy organic products. However, attitudinal studies do not accurately predict consumer behaviour and many consumers have yet to link the benefits of organics with their behaviour (Gribben and Gitsham, 2007). Although people hold positive attitudes towards organic products, actual expenditure on the product category is quite small. However, some figures given by Dimitri and Oberholtzer (2005) indicate that annual growth forecasts for organic sales range from 1.5 percent in Denmark to 11 percent in the United Kingdom. The US retail sales of organic products are predicted to grow 9-16 percent per year through 2010. Regarding the wine industry, it is quite difficult to estimate such a trend as reliable marketing and economic data are difficult to obtain (Geier, 2006). However, there are a growing number of wineries certified organic all around the world. For example in France, 1.639 wineries were organic in 2006 (+10% compared to 2003, Viniflor 2004, 2007). In Australia, 44 wineries produced organic wines in 2008.

Consumer Profiles

Following Ehrenberg et al.'s (2004) findings, one can assume that only a few consumers consume exclusively organic products, including wines, whereas the majority of consumers purchase from a repertoire of products with organic products as one them. Most studies attempt to differentiate the organic customer from the non-organic customer and then further define these two segments based on socio-demographic characteristics such as age, gender, education, household size and income (Thompson, 1998). When reviewing the results of these studies we have to keep in mind that clusters solely based on sociodemographics and attitude related variables have proven to be less stable and purchase behaviour relevant than segmentation based on the utility of product attributes (Wedel and Kamakura 1999).

Some studies suggest that higher income has a positive relationship with the individual's propensity to buy organic products (Kiesel and Villas-Boas, 2007; Tsakiridou, Mattas, Tzimitra-Kalogianni, 2006; Chinnici, D'Amico, Pecorino, 2002). Organic consumers belong to a medium high wage bracket in Italy (Crescimanno et al., 2002) whereas other studies state that income does not really affect a person's tendency to buy organic (Adamsen et al., 2007).

Are people of a certain age more inclined to buy organic products? Gil et al. (2000) found that younger consumers are unlikely to consume organic products as did Tsakiridou et al. (2006). But

Grunert and Juhl (1995) argue that young consumers are more likely to buy organic food, while Lockie (2006) found that organic food consumption does not differ across ages.

Women are more concerned with pesticide residues and the health of the environment, therefore, they are slightly more inclined to purchase organic products over men. Squires et al. (2001) support the notion that female consumers are more interested in organic products and are therefore more likely to buy organic products. In the four segments found by Gil et al. (2000) groups with a higher percentage of females tended to buy more organic foods and were more likely to be organic food consumers, while the younger group, dominated by male consumers were not as likely to be organic consumers.

The evidence suggests that education does influence organic purchases. It was found that post graduate and graduates are more likely to buy organic products than people who have not attained a university education and or high school level of learning (Krystallis, Fotopoulos, Zotos, 2006).

Household size, especially whether there are children in the house does seem to influence organic consumption (Tsakiridou et al., 2006; Chryssohoidis and Krystallis, 2005). Families with young children are more likely to be concerned with the safety and nutrition of food they feed their young children and so tend to buy more organic foods – this being based on the assumption that organics are better for you (Kiesel and Villas-Boas, 2007). The influence of children in the household does however vary between studies. For example, Thompson and Kidwell (1998) found that organic consumption increased in line with the number of children in the household while other studies only show a two percent increase in organic consumption when children in the household were present (Thompson, 1998).

Despite that these findings vary across cultures, the stereotypical organic customer emerging from previous studies can be described as the following. She is female, has a higher income, is in a house with children, is aged between 30-40 years old, is concerned about the environment, concerned about her own health and is living a balanced lifestyle. On the other hand, the non-organic customer is predominantly male, is not overly concerned about the environment, does not live in a house with children; is under 20 years old or above 55 years and does not place high importance on healthy eating.

Overall, attempts to classify organic food purchasers on the basis of socio-demographic variables have been mixed (Hughner et al., 2007). Therefore, psychographic profiles have also been developed. Thereby it was found that certain attitudes and beliefs can influence the likelihood of being an organic consumer. For example, a ‘green self perception’ had a positive relationship with the intensity of organic food consumption (Squires et al., 2001).

Consumers and potential consumers of organic products have been segmented according to their attitudes and beliefs, but results appear to be different depending on the cultural context. Baourakis (2004) attempts to segment consumer groups and found four groups, allocating the descriptions ‘environmental militants’, ‘traditional’, ‘dietary’ and ‘youthful’ organic consumers. Similarly, Eves et al. (2004) grouped consumers under the titles ‘deeply rooted’, ‘pioneers’, ‘pragmatists’ and ‘nostalgias’. Chryssohoidis and Krystallis (2005) also identified four groups: the health conscious, explorers, independents, and organic loyal. These groups are mainly descriptive and change enormously depending on the country of study and its unique environment. Because attitudes are known to be very unstable over time those segments are largely impractical and difficult to target by wine companies.

More closely related to wine consumption, Fotopoulos *et al.* (2003) compared buyers versus non-buyers of organic wines in Greece using a means-end chains analysis. The socio-demographic profile of the organic buyer shows that these people more often purchase food at specialty shops, are more concerned about their healthy dietary patterns and use more media compared to non-organic buyers. Fotopoulos *et al.* (2003) also indicate that any segmentation and positioning strategies would fail to identify motivational differences between organic wine buyers and non-buyers if based on the wine attribute preference of these two groups as findings of their means-end chains analysis show that buyers and non-buyers of organic wines mainly differ in the evaluation of the motivational benefits of wine purchase, but not the motives themselves.

Our review has shown that consumer segments should rather be based on their purchase behaviour and their willingness to pay for attributes, such as organic wine, than on attributes, motives and intentions, which have shown to be a weak and unstable predictor of purchase behaviour (Wedel & Kamakura, 1999).

Consumer willingness-to-pay (WTP) for organic wines

Most consumers have a positive attitude towards organic products and perceive them as healthier (Sirieix *et al.*, 2005), better for the environment, of a higher quality and tastier than conventional alternatives (Gil *et al.*, 2000; Kihlberg and Risvik, 2007). Therefore, it could be assumed that these benefits determine a price premium compared to similar conventional products.

Very little is known about the price premium that consumers would be willing to pay for organic wine. Only Brugarolas Molla-Bauza *et al.* (2005) focused directly on that topic. Barreiro-Hurlé *et al.* (2007) also estimated WTP of organic wine while investigating consumers' preferences and WTP for functional wines. Krystallis, Fotopoulos and Zotos (2006) also included organic wines in their study, but the +63.7% WTP for an organic wine seems 'unrealistic', therefore we do not consider this paper as part of the following review

Brugarolas Molla-Bauza *et al.* (2005) used a contingent valuation to determine consumers WTP for an organic wine. Consumers were asked "Are you willing to pay 10%, 25%, 50%, 100% more for an organic wine with respect to a conventional wine with similar characteristics?" Then, respondents also had the opportunity to write the maximum premium price that they would pay for an organic wine. 400 respondents from Alicante (Spain) participated in the survey, and were interviewed face-to-face in the street. Findings indicate that the average price premium that consumers are WTP for an organic wine is 16.92%. Using a cluster analysis based on life style segmentation, the WTP for an organic wine varied from 20.9% (for the more environmentally concerned), 18.36% (for wine consumers worried about eating and health, but not about environment) to 11.94% (for wine consumers worried by any of those factors). Findings of this study suffer from several limitations. The method directly electing willingness to pay for attributes without forcing respondents to make trade-offs between product attributes (e.g. product price vs. organic) is known to result in invalid and unrealistically high attribute importance (Louviere & Islam, 2007). We also do not know to which reference price respondents relate these price mark-ups. It is very likely the respondents referred to different wine prices than they usually purchase (Islam, Louviere & Burke, 2007). This ambiguity also makes it impossible to relate this percentage to a monetary value. Furthermore, the cluster analysis is related to consumer's life styles, not wine consumption behaviour. Therefore, it is not surprising to find similar WTP for different clusters. Finally, the sample only represents a very limited sample, consumers of the city of Alicante in Spain, which cannot be assumed to be representative for Spanish consumers in general.

The primary purpose of Barreiro-Hurlé *et al.* (2007) was to estimate if a market does exist for functional wines. They designed choice experiments including five different attributes: origin of the wine (4 levels), production method (2 levels, conventional versus organic), type of wine (2 levels, young versus aged), type of grapes (2 levels, regular versus Resveratrol content enhanced), and price (4 levels). 300 wine consumers living in Granada (Spain) were approached in a wine store during their buying trip. Each choice card presented included two wines (A and B) with the opportunity for the respondent to choose one or neither of them. Findings indicated that the additional WTP for an organic wine on average was 1.53€. This price premium represents an extra 15% of the maximum price that respondents declared they usually pay for a bottle of wine (10.11€). Unfortunately, Barreiro-Hurlé *et al.* (2007) did not model consumer heterogeneity, which makes it impossible to target those consumers who have a higher WTP for organic wines.

Despite the methodological issues raised, these two studies give us at least some reference figures to benchmark with our findings.

Research Method

We used a discrete choice experiment (DCE) with visual product representations to measure attribute importance for organic wine. DCEs use experimental designs to combine attribute levels into bundles or product concepts. Respondents are forced to make tradeoffs when choosing these product concepts (Louviere, Hensher, and Swait, 2000). For food and wine, DCEs have been widely applied in previous research (Barreiro-Hurle, Colombo, and Cantos-Villar; Lockshin, Jarvis, d'Hauteville, & Perrouty, 2006; Mtimet and Albisu, 2006; Mueller and Lockshin, 2008; Teratanavat and Hooker, 2006).

To measure the influence of organic claims on consumers' wine choice we varied four extrinsic wine attributes: price, region of origin, environmental claim, and organic claim (Table 1). In addition to the two eco-friendly messages (organic versus environmental claim), we also selected price and region of origin as two other extrinsic cues. Recent studies conducted in Australia (Goodman *et al.*, 2007; Lockshin *et al.*, 2006) indicate that these two cues are part of the top three most important attributes for wine consumers when choosing wine. Because it was the aim to study if environmental claims are a viable marketing strategy, the brand name was held constant and the made-up name "Hook Hill Estate" was created. The Shiraz grape variety was also kept constant across the labels. Prices were assumed to represent a 750ml bottle as stated on all labels. For the visual label we used an off-white chateau-style label, which has shown to be widely accepted by Australian wine consumers (Mueller and Lockshin, 2008).

The price levels were chosen to cover the medium and higher priced segment of Australian wines (\$12.50 - \$32.00) where products with organic claims will most likely be found. All regions were chosen to be known for Shiraz wines with varying levels of reputation. South Eastern Australia and Heathcote have a comparable lower awareness than McLaren Vale and Barossa Valley, but Heathcote has a higher reputation among knowledgeable consumers. As environmental claims, we included the attribute levels 'environmentally responsible' and 'carbon neutral' and used two logos following the Australian Carbon Reduction Institute (www.noco2.com.au). For the organic claim, we used the logo of Australian Certified Organic (www.australianorganic.com.au). To avoid an overrepresentation of environmental and organic claims untypical for the real wine market, two and three levels, respectively, were chosen to contain no claim and were jointly used as a reference level in later analysis.

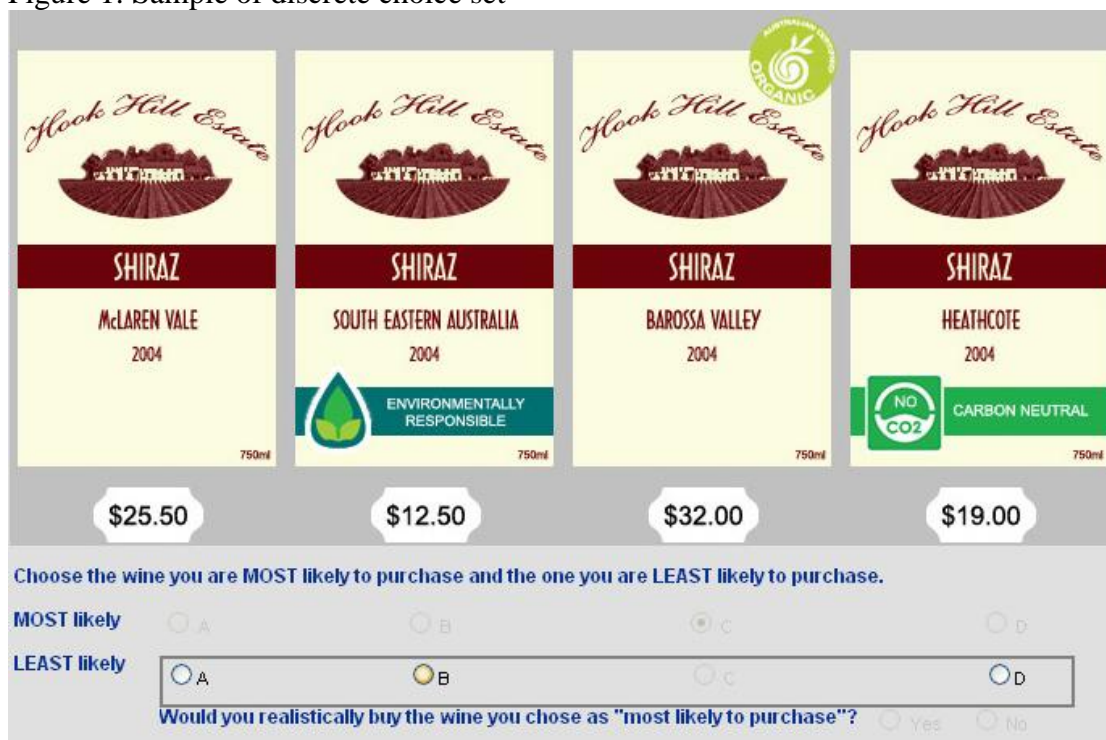
Table 1: Attributes and levels

	Attribute	Levels	1	2	3	4
1	Price	4	\$12.50	\$19.00	\$25.50	\$32.00
2	Region of origin	4	South Eastern Australia	Heathcote	McLaren Vale	Barossa Valley
3	Environmental claim	4	Environmentally responsible	Carbon neutral	no claim	no claim
4	Organic claim	4	Certified organic	no claim	no claim	no claim

All attributes were combined in graphically reproduced wine labels in a 4x4 orthogonal main-effects design with 16 choice sets of size 4. The statistical efficiency of the DCE design is 100% (Street & Burgess, 2007). Indirect visual methods have been shown to have higher validity in predicting actual choices for packaged goods rather than verbal descriptions (Mueller and Lockshin, 2008). Designers developed graphical bottle representations of all attribute levels with prices given below, typical for a retail environment.

The research survey was designed to simulate a real-life decision-making environment where the participant would imagine that they were going to purchase a bottle of wine for a ‘special occasion’. Respondents were asked to choose from the ‘shelf’ the wine they most and least preferred and state whether they realistically would purchase their most preferred wine (see Figure 1 for an example of a choice set).

Figure 1: Sample of discrete choice set



The survey was created as an Internet-based questionnaire, which has been shown to be superior to traditional offline (paper-and-pencil) method (Sethuraman, Kerin, & Cron, 2005). Accordingly, web-based surveys were found to be an especially suitable enhancement of pictorial elements and result in greater participant attention.

756 regular wine consumers living across Australia, recruited via a panel provider, completed the online experiment in November 2007. By regular wine drinkers, we mean people who drink wine at least once a month. In our survey, 55% of the respondents drink (overall) more than once a week, 23% drink once a week, and the remaining once or twice a month. The sample is representative of Australian wine consumers.

Analysis and Results

We used a latent class choice analysis to simultaneously estimate part-worth utility parameters and class membership from our discrete choice experiment as described above. Thereby individual-level choices of the best attribute combinations from every choice set are regressed against the effects coded attribute levels. We specified a linear regression model from the generalised linear modelling (GLM) family in which parameters (part worth utilities) differ across latent classes (Vermunt and Magidson, 2005). Our latent class model is defined by three components, the assumed probability structure (general mixture model probability structure), the distributional characteristics of the response variable (nominal best choice) and the linear utility regression function.

We used Latent GOLD choice 4.0 (Vermunt and Magidson, 2005) to estimate the latent class choice model. A model with five latent classes including a random-choice cluster resulted in the best fit without producing classes with too few respondents (less than 10%). The choice behaviour of respondents in the random class (19%) cannot be explained by the attributes included in the experiment. Modelling a random-choice class significantly increases the explained variance in the remaining four classes and results in more accurate parameter estimates, which would otherwise be confounded by random-choice respondents (Cleaver and Wedel, 2001). As also found in the real market place, the behaviour of those respondents is either stochastic or determined by other attributes not included in the DCE.

Utility part-worth estimates for attribute levels for all four classes are given in Table 4. The Wald statistics are strongly significant for all attributes and indicate that attribute part worth utilities are significantly different between the classes. Attribute importance (Table 3) is derived by calculating the range of estimated parameter values for each attribute and then normalising by dividing each attribute's range by the sum of all the attribute ranges.

Table 3: Attribute importance weights for classes and total sample

	Class1	Class2	Class3	Class4	Class5	Total Sample
Class size	34%	22%	14%	11%	19%	100%
Price	82%	71%	14%	38%	·	65%
Region	11%	7%	47%	58%	·	17%
Environmental claim	7%	17%	30%	4%	·	14%
Organic claim	0%	5%	9%	0%	·	3%

Results of the DCE imply that, for the total sample, price was the most important attribute with almost two thirds (65%) of the importance, followed by region (17%), and environmentally responsible claims (14%). The environmental claim was valued more than four times as much as the organic attribute, which on average accounted only for 3% of the importance for wine choice. However, the importance weights for each attribute differ greatly between the clusters. Two of the clusters carried all of the importance weight for organic wine, while the other two did not value this at all.

Table 4: Estimates of Latent Class choice model

		Class1	Class2	Class3	Class4	Class5	Mean	Stdev	Wald	df	p
Class size		34%	22%	14%	11%	19%	100%				
Characterisation		price sensitive	price + environ.	environ. + organic	region	random					
Predictors											
Price	\$12.50	3.07	1.07	-0.12	0.54	0.00	1.33	1.35	2577.1	3	0.00
	\$19.00	0.70	1.89	0.33	0.80	0.00	0.79	0.68			
	\$25.50	-1.71	-0.16	0.19	-0.13	0.00	-0.1	0.81			
	\$32.00	-2.06	-2.80	-0.39	-1.22	0.00	-1.51	1.08			
Region	South E. Australia	-0.26	-0.21	-0.52	-1.21	0.00	-0.34	0.35	686.3	3	0.00
	Heathcote	-0.34	-0.17	-0.84	-0.99	0.00	-0.39	0.35			
	McLaren	0.32	0.26	-0.17	1.84	0.00	0.34	0.57			
	Barossa	0.28	0.11	1.53	0.36	0.00	0.38	0.52			
Environmental claim	None	-0.16	-0.57	-0.75	0.01	0.00	-0.29	0.30	115.7	3	0.00
	Environmentally responsible	0.30	0.58	0.73	0.10	0.00	0.35	0.26			
	Carbon neutral	-0.14	-0.01	0.02	-0.11	0.00	-0.06	0.07			
Organic claim	None	-0.01	-0.17	-0.22	-0.01	0.00	-0.07	0.09	21.4	3	0.00
	Certified organic	0.01	0.17	0.22	0.01	0.00	0.07	0.09			

$R^2 = 0.4503$; LL = -10,493.60; BIC(LL) = 21,252.32, n = 756, #parameters = 40, df=716; Classif. Error = 0.0371, 5 Classes, Class5 no effects.

The four resulting clusters strongly deviate in the strength of their purchase relevant characteristics. The *first* cluster is very price sensitive with a strong preference for the lowest price level (\$12.50). Region has only minor importance for this class with an almost equal preference for McLaren Vale or Barossa origin. Price and environmental claims are the two most important characteristics for the *second* cluster, which compared to the first one prefers medium price level (\$19.00). The *third* cluster is the only consumer segment that places a noticeable importance on the organic claim, which accounts for 9% of the relative strength of all attributes analysed. Region of origin is the most important cue for this class with a strong preference for Barossa wines. This third cluster is also the most environmentally influenced but least price sensitive. Region and price are the most important attributes for the *fourth* segment with a strong preference for the McLaren origin. Because cluster three was the main target segment for organic wine, we will focus on this consumer segment in the following discussion.

We estimated a choice model with price as a continuous variable, which allowed us to calculate WTP amounts for all attributes by dividing the attribute level by the price beta. Here, cluster three reveals the highest WTP of \$4.99 for the organic claim, which seems to be caused by the very low price sensitivity and the high utility for organic wine.

An analysis of variance of the significant differences of socio-demographic and wine behaviour related variables between all five clusters revealed the following significant differences for the third class. Firstly, this potential consumer segment has a significantly higher knowledge of what the organic claim means, cares more about how their food is grown, they most often purchase other organic food, and claim to be an 'environmentalist at heart'. Consumers in this class are more likely to be younger, female, and have a higher than average willingness to pay for wine for a normal consumption occasion.

Discussion and Conclusions

Our results demonstrate that there is a market for organic wines in Australia, albeit not very large. A small proportion of wine consumers (14% of the sample) are clearly environmentally conscious with eco-friendly claims accounting for almost 40% (30% + 9%) of the decision making process, when making a purchase for a special occasion. Previous research shows this to be about 25% of wine consumption occasions in Australia (Oppenheim, Hall and Lockshin 2001).

The interesting but also sobering finding for the organic wine industry relates to the extent organic is less valued (9%) compared to an environmental claim (30%). Regarding organic wines, this situation might be explained by the physical availability of organic wines on the shelves. With a small production of organic wines, it is difficult for consumers to easily find them in stores. At present, the production and commercialization of organic wines are still relatively unknown in Australia. However, importing and supplying organic wines to the Australian market is not an impossible task. Therefore, this low demand for organic wines reflects a low salience of these types of wines. Salience refers to the propensity of the product or brand to be noticed or thought of in buying situations (Romaniuk and Sharp 2004).

Indeed, awareness, which differs from salience, for organic products seems to be quite high with 80% of the respondents agreeing with the statement 'I know what organic (food) means' and 88% of the sample declaring that they have already eaten organic products. However, only 32% of the sample declared that they have already drunk an organic wine. In other words, 'organic' may come to mind for food, but not for wine (as mentioned previously) and especially not during the purchase process (low salience). There is a strong need for more market information and education, especially as the term organic does not clearly signal the environmental aspect to many prospective consumers.

That relates to the extent consumers were willing to value more an environmental claim (environmentally responsible), which has never been formally defined. But such a claim makes sense to consumers during their (simulated) purchase process. In other words, that claim increases the salience of eco-friendly wines compared to 'organic' or 'carbon neutral'.

Overall, a minority of Australian wine consumers (14%) do value organic wines. For this group, consumers are willing to pay a price premium of \$4.99 for an organic wine, for a special occasion. This represents a 22% premium compared to a conventional wine for this segment. Nevertheless, the 'average' Australian wine consumer would only pay a 1% premium for an organic wine which equals \$0.25. Thus, the attribute importance of organic and the WTP derived in our choice experiment is far less than the average 15% and 1.53€ given by Barreiro-Hurlé et al. (2007). To be able to compare our results with those ones of Barreiro- Hurlé et al. (2007) we should mention that the consumption situations analysed were different and that for their daily consumption consumers from Granada (Spain) are willing to pay an average price of 10.11€ (\approx Au\$16) for a bottle of wine compared to \$22.50 for the Australian consumers for a special occasion in our experiment. Further research has to show what causes this strong deviation between the average willingness to pay for organic wine between Alicante and Australian consumers (Au\$ 0.25 vs. 1.53€). Interestingly, the 22% premium for an organic wine that we found is relatively close to the premium of 20.9% found by Brugarolas Molla-Bauza et al. (2005) with contingent valuation for their group of environmentally concerned consumers. However, the size and characterisation of both two groups are not directly comparable.

Based on the part-worth estimates, our figures suggest that the group of environmentally conscious consumers would most value a 'Hook Hill Estate 2004 Shiraz' from the Barossa Valley that is environmentally responsible, certified organic, at a price of \$19.00. As previously mentioned, this segment is very similar to the average environmentally conscious wine drinker of previous research (younger and female with a higher than average WTP for a wine for a normal consumption occasion).

Limitations

Our research findings mainly face two limitations: limitation of attributes and validity for real purchase behaviour. Louviere, Hensher & Swait (2000) discuss the high validity of results derived by DCEs which have proven to be very reliable in predicting real markets. For our analysis we find the surprising result that consumers of the third cluster are less likely to have ever drunk an organic wine and eaten organic food, despite they reveal the highest importance of organic among all respondents. This contradiction demonstrates the simulation character of DCE. Thus, this contradiction might be explained by the fact that this group is clearly environmentally conscious for its purchase intent, resulting in a halo effect for related attributes, such as organic. Nevertheless, this purchase intent has not been translated into action, i.e. they are less likely to have eaten or drunk organic products. Further research is necessary to understand if those consumers are only hindered by limited availability of organic products in Australia and would behave according to our predictions if organic products would be easily available to them.

The other limitation of the research is linked to the two attributes that were held constant: the brand and the grape variety. For a special occasion, wine consumers could have had a different decision making process if the wine was a white wine. From previous research we know that in Australia, brand is one of the top three most important attributes (Goodman et al., 2007). Therefore, the use of a well-known brand(s) will alter the importance given to the other attributes (Islam, Louviere & Burke, 2007).

Practical Implications

The findings suggest various implications for organic wineries and marketers. It can be seen that most consumers do not place a high value or dollar-worth on the organic attribute. It can safely be assumed that this will not change dramatically in the short term. It is very unlikely that organic producers can change the attitudes of non-aware consumers over a short period of time.

Nevertheless, our results suggest three major roads to improve the position of organic wine in Australia: broader availability by cross-marketing organic wine together with organic food, a clearly regulated labelling system and use of various forms of communication, including advertising. A free form of advertising, word of mouth, could also be utilized to increase the knowledge and features of organic products. Consumers highly involved in a category are usually market leaders who can influence the opinion of other consumers. However, clear certification and regulatory systems need to be promoted so that consumers are not confused and do not use the term 'organic' merely as a buzz-word without real meaning attached to it.

The role and promotion of labels are especially important in the Australian market structure. Firstly, because organic alcohol is not generally sold in farmers' markets like it is in Europe and thus, trust by personal encounter between farmer and consumer regarding the production process cannot be established. Also, as organic wine is rarely sold along with other organic products in supermarkets or organic specialist stores, it has to compete against hundreds of wines on the shelf and differentiate itself against its generally cheaper, conventionally produced counterpart. Organic wine producers could also focus on group promotion of their product in order to create more and larger organic sections in existing wine stores or on restaurant wine lists.

One of the important findings that came from the survey is the link between the region of origin and organic attributes for the third cluster. A regional association with the organic process could potentially increase the region's salience and in doing so, increase market share. Also, due to the popularity of environmental issues in the media today (Thogerson, 2006), publicity of the region and winery could be developed and free media coverage gained. The distinctiveness that an organic label could give a winery, along with the 'early mover advantage', could add value to the product as well as meet the increasing market need for more eco-friendly products. At this stage, it would seem to be a risky, but nonetheless possibly fruitful strategy to follow.

Conclusion

Australia's role in the organic market is considerable as it has the largest land area under organic food production in the world. However, that point highlights the fact that food is not a beverage as Australia is not the biggest producer of organic wine. It is clear that the market should be better educated regarding organic wine and the link established to the environment and healthy eating in consumers' minds in order to increase the potential consumption for organic wine. It may be in the short term that organic wine producers will find a more positive consumer reception in European markets rather than at home.

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