

Consumer Attitudes Regarding Environmentally Sustainable Wine: An Exploratory Study of the New Zealand Marketplace

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ABSTRACT

Previous research has suggested that consumers are becoming increasingly concerned by the effects of conventional agricultural food production practices on human health and environmental wellbeing. This study sought to understand whether environmentally sustainable practices in the vineyard would equate to advantages in the wine marketplace. Structured questionnaires were used to ascertain the views of wine consumers in Christchurch, New Zealand. The findings of this study indicate that consumers have a strong demand for wine which is produced using “green” production practices. Consumers believe that the quality of sustainable wine will be equal to or better than conventionally produced wine, and they are prepared to pay a higher price for this wine.

Keywords: environment, sustainable, wine industry, consumer perceptions

1. INTRODUCTION

Over recent years, consumers have become increasingly concerned by the effects of conventional agricultural production practices on both human and environmental health. Many agribusinesses have responded to these concerns in order to retain or attract customers and to differentiate their products in crowded marketplaces. The New Zealand wine industry has also responded; the Winegrowers organisation has a target of using sustainable practices

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across all grape and wine production in New Zealand by the 2012 vintage [26]. Many wine producers have already adopted balanced environmental strategies; these include the promotion of natural solutions to provide biological control of pests and diseases in the vineyards and other ecological engineering initiatives focused on areas such as pollination, soil fertility, filtering of vineyard effluent, and the restoration of natural habitats.

This study has examined consumer views in order to determine whether the adoption of environmentally sustainable practices will indeed provide a point of difference in the wine marketplace. One of the aims of this study was to assess the consumer demand for wines which have been produced using environmentally sustainable practices. In addition, this study examined consumer perceptions regarding the effect of environmentally sustainable practices on wine quality and price.

2. LITERATURE REVIEW

Issues arising from agricultural production, such as soil erosion, nutrient run-off, effluent discharge, water pollution, water scarcity, decreased biodiversity and pest pressures, are a concern in many countries [1]. These issues are just as applicable to viticultural production as they are to other forms of horticultural or agricultural production. For example, wineries have been attributed as causing several environmental problems in the Napa valley, including soil erosion, habitat loss, pesticide drift and groundwater depletion [2]. In New Zealand, groundwater depletion is becoming an issue in Marlborough, which is the largest of the nation's wine-producing regions [3]. Sharples [4] noted that synthetic fertilisers, herbicides and pesticides are commonly used in most wine producing nations, and New Zealand is no exception.

There are numerous definitions of ‘environmentally sustainable practices’ in the literature. An Australian study suggested that the term implied a longer-term environmental focus including the management of desalination, soil degradation, pollution of water and air, chemical residues, and impacts to bio-diversity, during both production and marketing processes [5]. This study suggests that the term environmentally sustainable practices would include many of the biological and ecological strategies that have been adopted by some New Zealand wine producers.

At the heart of all sustainable production practices is a desire to meet the needs of today without damaging the ability of the environment to meet the needs of tomorrow. Warner [18] noted that sustainable wine production in California incorporates such practices as improved pest monitoring, increased use of less ecologically harmful pesticides, more precise measurement of fertiliser and water inputs, and an increased focus on soil fertility. Other Californian researchers have noted that sustainable vineyard practices include a reduction in all inputs (i.e. chemical fertilisers, insecticides, fungicides, herbicides, sulphur and water), as well as initiatives such as habitat restoration and the use of cover crops [28]. The New Zealand wine industry has instigated an integrated scorecard approach to sustainable production; a number of practices focused on soils and fertilisers, sward and irrigation management, and pests and diseases, are recommended in the SWNZ scheme [3].

Consumers around the world are becoming increasingly concerned with ethical, environmental and health issues associated with conventional production practices [6,7,8]. Brugarolas Molla-Bauza et al. [7] noted that these factors are especially important for consumers when they are considering the purchase of food products. In particular, recent

food safety scares in Europe have raised consumer awareness of issues arising from intensive production methods, especially the use of synthetic fertilisers and pesticides [6].

Consumer concern over conventional production practices has led to an increased demand for products which have been made by processes which take environmental issues into account, such as organic or sustainable practices [6,9,10,11]. For example, Saunders et al. [10] noted that organic exports from New Zealand have grown from NZ\$12 million in 1997 to a value of NZ\$70 million in 2001. An increased demand for green products has also been reported with specific reference to wine [4], and organic wine specialists in the UK have reported a growth in sales of 300% over the period from 1989-1991 [12].

Whilst many authors have discussed the increased demand from consumers for green products, some studies have reported a mismatch between consumer preferences and their purchase decisions. An Australian study reported that growers and packers do not believe that there is a demand from their customers for environmentally sustainable products [5]. Similarly, Scott [13] suggested that consumers have quite high awareness of organic wines, but that this does not translate into a significant purchasing demand. Jack [14] reported that only 11% of UK food purchase decisions are significantly influenced by green factors.

The increase in the supply of “green” products has also arisen from producers’ responding to retailer demands for improved food safety and quality [5,6]. Improvements that have been introduced to market-entry requirements, industry regulations, and government legislation have also contributed to an increased focus on environmentally sustainable production. Many authors have noted that companies are “going green” in order to differentiate their products and to gain a competitive advantage in aggressive markets [5,7,15,16,17,18]. Finally, some

growers have moved to adopt new practices which lower chemical usage in order to benefit from decreased input costs [19]. The adoption of environmentally sound practices by wine producers in New Zealand's Waipara wine region have resulted in cost savings through reduced applications of synthetic sprays and fertilisers [27].

It is likely that demand for environmentally responsible products is higher amongst European and North American food consumers than it is amongst New Zealand consumers. Previous research has suggested that New Zealand consumers have little interest in purchasing "green" food products in comparison to their European counterparts [10]. Lyons et al. [6] noted that consumers in Australia and New Zealand are accepting of government and industry messages stating that food items are safe to eat and have been produced using 'clean and green' practices. It is unclear if this level of acceptance applies to wine purchasing consumers. Our first hypotheses examine consumer views regarding sustainably produced wine, in terms of both consumer preference for drinking such products and purchase intentions towards these wines:

H1a Consumers prefer to drink wine that has been produced using environmentally sustainable practices.

H1b Consumers intend to purchase sustainably produced wines over conventionally produced wines of similar quality and price.

Whilst many physical product attributes are obvious to a consumer at the time of purchase, environmental attributes are difficult to detect [11]. Producers must therefore use some form of eco-label to provide consumers with information about the manner in which the product has been made and to give them an element of trust.

Some authors have questioned the usefulness of eco-labels as consumers are limited in their ability to process information [10]. Vermeir and Verbeke [8] suggested that consumers are often unable to make informed purchase decisions because the benefits associated with sustainable products are poorly communicated to them and because they have limited knowledge of agricultural production practices. Warner [18] noted, however, that it is often difficult for producers to communicate complicated farming practices to consumers. Others have also argued that consumers are confused by environmentally sustainable labels and are sceptical of “green” claims [5,16]. In contrast, an American report suggested that around half of all adult consumers look for environmental labelling on products [20], and an Australian study reported that 76% of consumer purchase decisions were influenced by environmental messages on product labels [11]. Indeed, D’Souza et al. [11] claim that consumers are aware of, and have a demand for, information regarding the environmental attributes of a product. Based upon the findings of Phillips [20] and D’Souza et al. [11], our second hypothesis is:

H2 Consumers want to be informed through labelling of which wines have been produced using environmentally sustainable practices.

The literature presents somewhat divergent findings regarding consumer views on the effect of environmentally focused practices on product quality. Peattie [16] reported that around a third of all Americans believed that green products were technically inferior to those which were produced without any environmental care. Similarly, D’Souza et al. [11] found that only a quarter of the consumers in their Australian study perceived green products to be of lower quality than alternative products. The findings of both the Peattie [16] and the D’Souza et al. [11] studies clearly suggest that a majority of consumers do not perceive that products produced with an environmental focus will be of inferior quality to those which are produced using conventional practices.

Conversely, Bhaskaran et al. [5] suggested that consumers find organic foods to be less aesthetically appealing than conventional products. A content analysis of previous studies revealed that quality parameters such as ethanol, sugar and acid levels were not significantly different in wines produced using organic and conventional viticultural [21], but no literature has been found to have examined consumer views regarding their perceptions of the quality of 'green' wines. Our third hypothesis explores this area:

H3 Consumers believe that environmentally sustainable practices have no effect on wine quality.

A lack of consensus is also evident when reviewing the literature related to the pricing of green products. Some authors are sceptical that consumers will accept paying more for green products [5,15,16]. In a study of attitudes toward Colorado wines, the premium that consumers were willing to pay for an environmentally friendly wine was calculated at just 13 cents over the per bottle base price of \$10 [22]. This result supports Fairweather et al. [19] who suggested that wine was a product for which the adoption of environmentally focused practices would not attract any significant price premium in the marketplace.

In other cases, authors have suggested that consumers are willing to pay a premium for eco-labelled products because of such added benefits as food safety, quality, animal welfare and environmental wellbeing associated with these products [10]. A study of Spanish consumers reported that the average premium they were willing to pay for an organic wine was around 16% above the price of a conventional wine [7]. In a study of Australian consumers, almost 60% held the perception that environmentally safe products would be more expensive than conventional products, but almost 70% of respondents indicated that they would purchase

these products even if they were more expensive than the alternatives [11]. Jack [14] reported that 59% of global consumers and 45% of UK consumers are happy to pay a higher price for green products. Based on these studies, our final hypotheses are thus:

H4a Consumers perceive that the adoption of environmentally sustainable practices will increase the price of wine.

H4b Consumers are prepared to pay a premium for wine produced using environmentally sustainable practices.

3. METHOD

Data was collected via an intercept of retail shoppers using an interviewer administered questionnaire. Interviews were conducted inside a total of eleven supermarkets, general liquor stores, and specialty wine stores located in the city of Christchurch, New Zealand. Christchurch is the second largest city in New Zealand and its population can be considered to be representative of the national marketplace. The interviewer randomly intercepted consumers in these stores who had selected wine to purchase. Respondents were interviewed at various times of the day and various days of the week, over a seven-day timeframe in February 2008. The study used a forced choice approach, with respondents indicating their level of agreement to a series of statements included in a structured questionnaire. The majority of these statements were responded to using a Likert scale anchored from 1 (strongly disagree) to 5 (strongly agree). Data were analysed in SPSS.

A total of 109 respondents agreed to take part in the survey, giving a 54% response rate. A qualifying question was used to ensure that all respondents included in the survey were consumers of wine. The participants were 62 females and 47 males, with an age range from 18 to 60+ years. A greater percentage of females were interviewed in supermarkets (64%),

whilst male respondents were more prevalent in the specialty wine stores (89%). Over 41% of the respondents held an undergraduate or postgraduate degree compared to the national average of 18%; this is consistent with other studies which have reported that wine consumers have a higher than average level of education.

4. RESULTS

Over 75% of respondents indicated that they would prefer to drink wines that had been produced using environmentally sustainable practices (see Figure 1). Only a small number of respondents (4.6%) had no such preference for environmentally sustainable wines. Although previous research had suggested that New Zealand consumers would not have a strong preference for green products, this result provides very strong support for H1a.

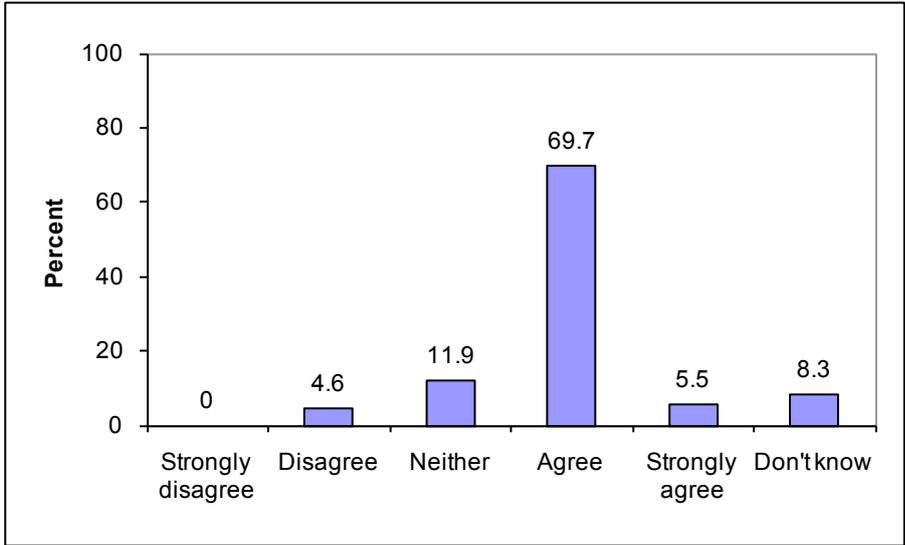


Figure 1. Consumer preference for drinking sustainably produced wines

The results illustrated in Figure 2 show that just over 72% of respondents indicated an intention to purchase an environmentally sustainable wine over one of similar price and quality which had been produced using conventional viticultural practices. Only 11% of

respondents had no intention to purchase sustainable wine ahead of a similar conventional product, thus providing strong support for H1b.

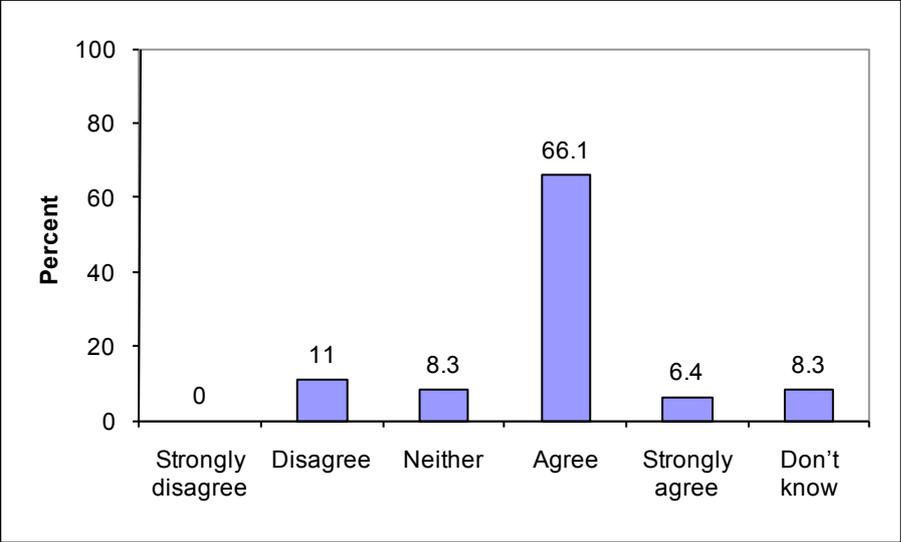


Figure 2. Consumer intentions to purchase sustainably produced wines over conventional wines

Consumer desire for some form of eco-labelling to distinguish sustainably produced wines is illustrated in Figure 3. Almost 93% of respondents wished to see some form of labelling to inform them about wines that have been produced using environmentally sustainable practices, thus providing strong support for H2.

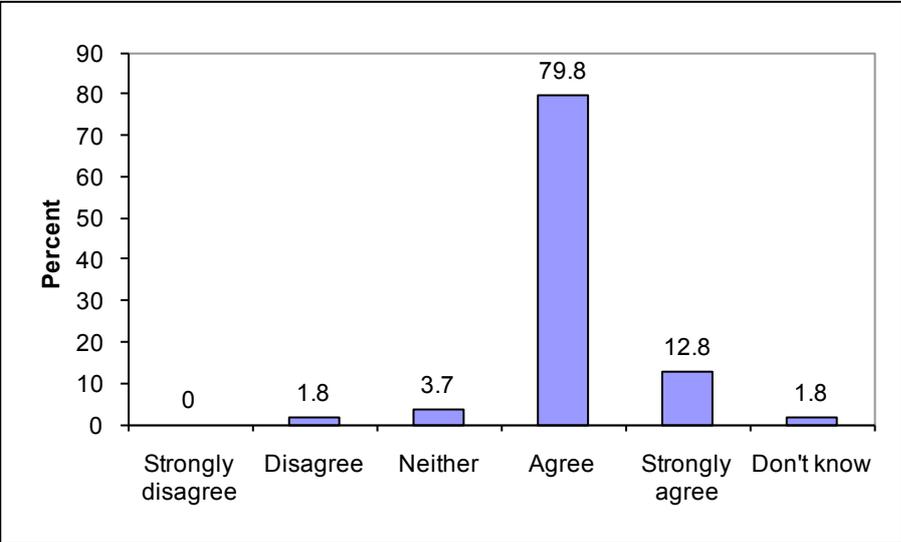


Figure 3. Consumer desire for labels to identify sustainably produced wines

Figure 4 illustrates consumer perceptions regarding the effects of environmentally sustainable production practices on wine quality. The majority of respondents (53%) believed that producing wines through environmentally sustainable practices would result in no change to wine quality, thus partially supporting H3. Interestingly, a noteworthy 37% of respondents believed that quality would actually increase if sustainable practices were used to produce wine.

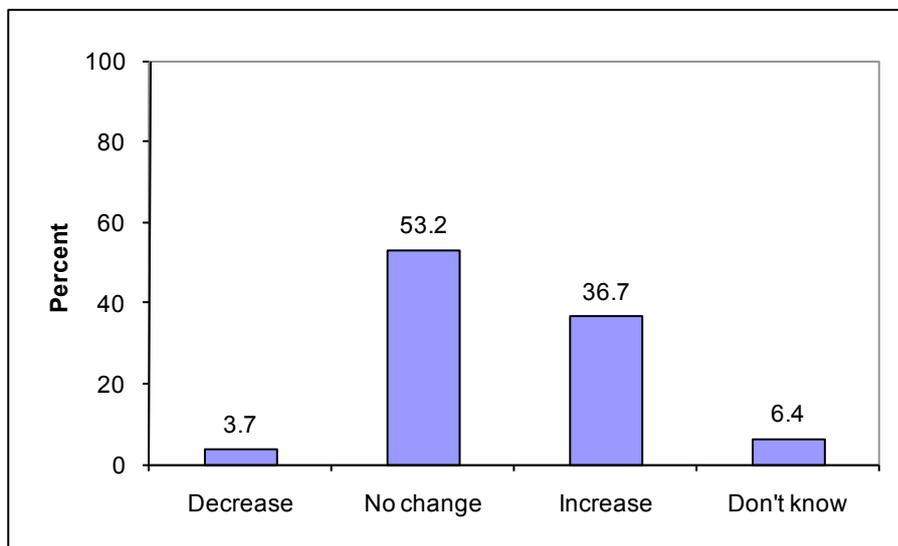


Figure 4. Consumer perceptions of the effects of sustainable practices on wine quality

In terms of wine price, a clear majority of respondents (almost 82%) believed that switching to environmentally sustainable practices would result in an increased price for wine (see Figure 5). This result provides strong support for H4a.

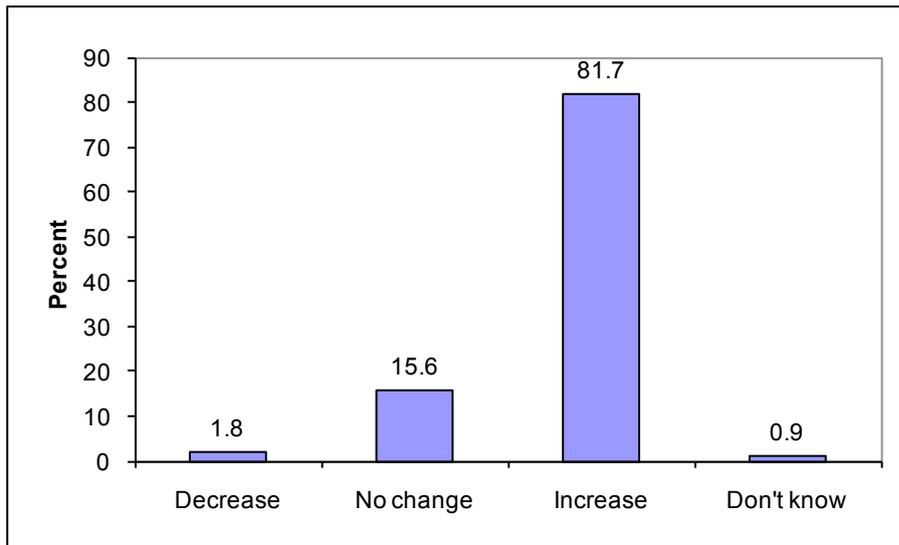


Figure 5. Consumer perceptions of the effects of sustainable practices on wine price

The results also provide support for H4b, in that around 73% of respondents indicated that they would be prepared to pay more for an environmentally sustainable wine (see Figure 6). Around a third of respondents were prepared to pay a premium of up to 5% for sustainably produced wines, whilst another third were prepared to pay between 6 to 11% more for such products.

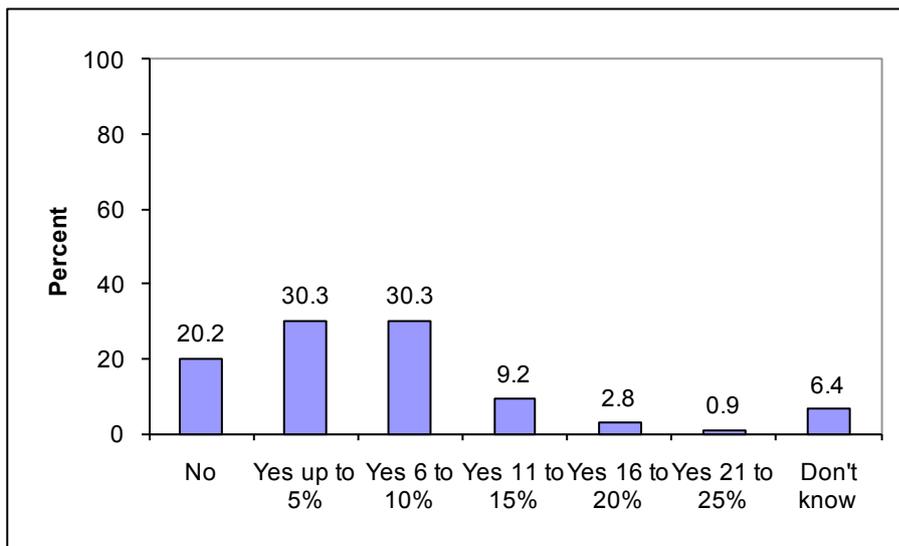


Figure 6. Consumer willingness to pay more for a sustainably produced wine

5. DISCUSSION

The results clearly indicate that consumers have a preference for wines which have been produced using environmentally sustainable practices and are labelled as such. This finding provides support for previous studies which have reported that consumers are becoming increasingly concerned with environmental and health issues associated with conventional production practices [6,7,8,]. Brugarolas Molla-Bauza et al. [7] suggested that environmental and health factors are especially important during consumer food purchasing decisions; it is likely that a consumer who is concerned by the quality and safety of the food products they consume, would be equally concerned by the quality and safety of wine products which are also ingested.

The preference for sustainable wines reported in this study suggests that a significant consumer demand exists in the New Zealand marketplace for such products. This result provides support for other studies which have reported an increased consumer demand for green products [6,9,10,11] and for wine specifically [4,12].

This study had anticipated that New Zealand consumers would be less strongly influenced by environmental concerns because, unlike their European counterparts, they have not been exposed to any recent food safety or quality scares. Previous researchers had also suggested that the green movement is considerably less developed in countries such as New Zealand [6] and that there is less demand for environmentally friendly products in the New Zealand market compared to overseas markets [26]. Whilst New Zealand markets itself and its products using a 'clean and green' image, the strength of the consumers preference for environmentally sustainable wine was nevertheless somewhat of a surprise. Whilst these findings suggest that the adoption of environmentally sustainable practices by New Zealand

wineries may result in significant benefits in the local market, they also suggest that the competitive advantage gained in major export markets could be even greater.

A majority of consumers wished to see information about production practices on the labels of environmentally sustainable wines. This result provides support for D'Souza et al. [11] who claimed that consumers have a demand for environmental product information. Phillips [20] reported that around half of all American consumers seek out environmental labelling on products; the findings of this study indicate an even stronger demand amongst New Zealand wine consumers for the provision of information pertaining to environmentally sustainable production practices. Again, this demand for information is likely to be even greater amongst consumers in the Northern Hemisphere wine markets. Vermeir and Verbeke [8] revealed that consumers with higher environmental involvement were more likely to purchase sustainable products and suggested that the level of involvement could be increased through the provision of information from green producers. Stisser [9] noted that 54% of consumers believe company claims about their environmental initiatives. This rating is twice as high as consumer belief in general advertising claims. Environmental labelling may thus be a key tool in achieving green product positioning and differentiation in a highly competitive global wine market.

More than half of the wine consumers perceived that wine quality would not change with the adoption of sustainable practices, whilst more than a third of consumers felt that the quality of wine would actually improve if sustainable practices were adopted. Fewer than 4% of consumers believed that wine quality would decrease if sustainable production practices were utilised. This finding suggests that consumer perceptions of the quality of sustainable wines is much higher than has been reported previously; Peattie [16] reported that a third of

American consumers perceived green products to be technically inferior, whilst D'Souza et al. [11] reported that a quarter of Australians perceived green products to be of lower quality. It is not clear whether consumer views regarding the quality of green products has improved over time, or whether the differences in these results is due to this study's specific focus on wine as a product. This result implies that marketplace risks associated with the adoption of environmentally sustainable production practices by wineries are insignificant; the majority of consumers perceive that the quality of wines produced using these practices will remain the same or will improve.

Whilst consumers generally perceived that sustainable wines would be more expensive than conventional alternatives, about 80% indicated that they were willing to pay a higher price. These findings provide support for those researchers reporting that consumers are willing to pay more for green products in general [11,14] and for wine in particular [7].

Saunders et al. [10] judged that those organisations which have a focus on sustainability tended to outperform those that do not. Nowak and Washburn [23] suggested that product differentiation, competitive advantage and increased sales could be achieved by wineries through the adoption of environmentally focused practices. Other authors have also noted that having a positive environmental image can be a benefit internationally to a company or a specific brand [9]. In their insight into the future of the international wine industry, Bisson et al. [24] suggested that producers will need to be environmentally sustainable stewards as this will act as a strong influence on consumer purchase decisions, especially amongst typically well educated and affluent wine consumers. However, a competitive advantage can only be gained in the marketplace if companies tell their consumers' about their environmental focus, and this study has clearly identified that consumers have a desire for informational labels.

As others have previously noted, the New Zealand wine industry promotes itself as a producer of premium quality wines to niche markets, and frequently trades on the “clean, green” image of the nation itself [3]. This research has demonstrated that the adoption of environmentally sustainable practices by New Zealand wineries may result in a competitive advantage in the marketplace. Consumers have a preference for sustainably produced wines, thus indicating that they view these products as having a clear point of difference from other conventionally produced wines. Product differentiation and the enhancement of New Zealand as a clean, green producer of wine can only serve to increase the success of the industry across both its local and export markets.

The findings of this study are limited by the type of sampling procedure and by the single geographical location. Further data collection in additional New Zealand cities may be needed in order to confirm that these results are generalisable across the entire wine purchasing population. Likewise, the suggestion that consumer views regarding sustainable wines would be even stronger in our major export wine markets can only be confirmed by extending this study into countries such as Australia, the UK, Canada and the US. A final limitation is that many previous environmental studies have reported that consumers have an attitude-behaviour gap; in other words, the attitudes or beliefs that they report in studies are often a poor indicator of their actual marketplace purchase behaviour [8,25]. This study has identified consumer preferences and purchase intentions regarding sustainably produced wines, but has not examined actual consumer wine purchasing behaviour. Subsequent studies should thus seek to document a connection between consumer attitudes towards sustainable wines and actual purchase behaviour.

ACKNOWLEDGMENT

This study was funded by the Faculty of Commerce, Lincoln University and the Foundation for Research, Science and Technology via research grant LINX0303 Ecosystems Services.

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