

**Sustainable winegrowing practices and
wine tourism in Australian and New
Zealand cool climate winegrowing regions:
a longitudinal and comparative context**

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A thesis submitted for the degree of
Doctor of Philosophy at the University of Canterbury,
Christchurch, New Zealand

June 2019

Abstract

This study examines wineries' perceptions towards wine tourism and sustainable winegrowing practices in New Zealand. In order to investigate and contextualise the current situation in New Zealand the National Wineries' Survey is revisited and extended to provide a longitudinal time series of data from the New Zealand wine industry. This data is also utilised to provide a comparison of the New Zealand situation with that of Tasmania, Western Australia and the broader international approach towards sustainable winegrowing schemes.

A multi-stage mixed methods approach was adopted in this study. The first stage consisted of a content analysis conducted of international sustainable winegrowing programs. The results obtained from this analysis, together with an assessment of the relevant literature and previous national winegrower surveys, assisted in the formulation of the second stage of this study in the form of a 2015 survey of New Zealand winegrowers. This survey drew on issues of wine and biosecurity, climate change, social justice issues and eco-labelling as well as wine tourism. These were examined within the context of three key drivers of sustainability: the physical aspects of sustainable wine production; the internal drivers within wine businesses for the adoption of sustainable practices; and the external regulatory aspects which govern the adoption of sustainable wine production practices. This element of the research provided for a unique longitudinal perspective on sustainable winegrowing and wine tourism in New Zealand. The third component was a comparative analysis of wine tourism, innovation and sustainability in Australian cool climate regions so as identify the potential effects of different approaches to the governance of sustainable winegrowing. Therefore, in 2016 a survey was undertaken of Tasmanian and West Australian wineries that used the same questions as in the New Zealand research.

This research provides for a unique longitudinal and international comparative approach to assessing wine tourism, innovation and sustainable winegrowing in New Zealand. The findings indicate that there were substantial concerns with the perceived value provided by both wine tourism and sustainable winegrowing practices. These concerns exist at both the firm level and with the governing bodies responsible for implementing sustainable winegrowing initiatives. The issue of mandatory versus voluntary membership of sustainable winegrowing programmes was shown to be a key reason why New Zealand winegrowers were becoming increasingly disenfranchised with the SWNZ scheme. It was also found that Australian and New Zealand wineries held differing perspectives on many important issues, including the areas of climate change, biosecurity, migrant workers' rights and governance. Further to these issues were distinct differences in viewpoints surrounding marketing initiatives such as eco-labelling, and the benefits of sustainability in terms of providing a competitive point of difference.

Unless this perception of the value of sustainability within both the New Zealand and Australian wine industry is altered in the future, it appears that there will continue to be an ongoing issue as to how sustainable winegrowing initiatives are implemented.

Keywords: Wine tourism; sustainable winegrowing; cool climate winegrowing; rural development; regional development; biosecurity; social justice; migrant workers' rights; branding; partial-industrialisation; innovation; climate change, cross-national research.

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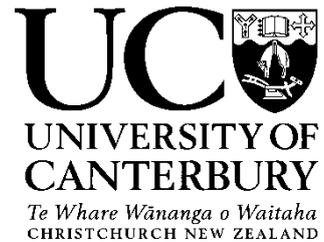
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Please detail the nature and extent (%) of contribution by the candidate: 70% (Baird)/30% (Hall). Primary data was used which had been gathered for the PhD thesis by Baird from New Zealand based winegrowers, along with sections of the literature review, discussion and conclusion.

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Baird, T., Hall, C., & Castka, P. (2018). New Zealand Winegrowers attitudes and behaviours towards wine tourism and sustainable winegrowing. *Sustainability*, 10(3), 797-820.

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Please detail the nature and extent (%) of contribution by the candidate: 70% (Baird)/20% (Hall)/10% (Castka). Primary data was used which had been gathered for the PhD thesis by Baird from New Zealand based winegrowers, along with sections of the literature review, discussion and conclusion.

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Name: Prof. C. Michael Hall Signature: *Colin Michael Hall* Date: 6 June

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Appendix J: Publication 1:

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Appendix K: Publication 2

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Appendix L: Publication 3

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Appendix M: Publication 4

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Acknowledgements

I could not have done this thesis and survived this journey without the support of the following people listed. Professor C. Michael Hall - thank you for your time, patience and good advice – without you this thesis would not have become a reality. I'd also like to thank Dr. Pavel Castka for his support and guidance throughout this process. To Dr. Haywantee Ramkissoon at Curtin University in Perth – a special thanks for the co-ordination of the data collection for the Australian survey participants. To all the New Zealand, Tasmanian and Western Australian wineries who took part in this survey - thank you. To Alison Taylor, Philip and Aileen Baird, Nicky Baird, Patrice Wilkin, Fraser Graham, Kieran McNabb, Rob McDonald, Dean Nagle, Cam Walker, Michael Darby, Dr. Sarah Wright, Dr. Juan Pellegrino, Dr. Roslyn Kerr, Dr. Kevin Moore, Donna Heslop-Williams and Irene Joseph – thank you for your support in this process. Amanda Peter, Dr. Erin Harrington, Andrew Barry, Rob Collins, Prince, Stu Robb, Alfie, Ari and Har Mar (RIP) and Shante (RIP) – thank you. To the collective at 8K Radio – thanks for being so understanding and for your support. I would also like to thank the music of Drab Majesty for keeping me sane.

This thesis is dedicated to the memory of George Gossett (1966 – 2015).

Academic publications arising, in part, from research conducted for this thesis include:

Baird, T. & Hall, C.M. (2013). Sustainable winegrowing in New Zealand. In C.M. Hall & S. Gössling (Eds.), *Sustainable Culinary Systems: Local Foods, Innovation, and Tourism and Hospitality*, pp. 223-240. London: Routledge.

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Baird, T., Hall, C., & Castka, P. (2018). New Zealand Winegrowers attitudes and behaviours towards wine tourism and sustainable winegrowing. *Sustainability*, 10(3), 797-820.

As a result of the 2010-11 Canterbury earthquakes a copy of the 1997 National Wine Tourism Survey was not able to be included in the appendices.

Chapter 1

Introduction

1.1 Chapter introduction

This thesis aims to provide a comprehensive examination of wineries' perceptions towards wine tourism and sustainable winegrowing practices in New Zealand. In order to investigate and contextualise the current situation in regard to wine tourism and sustainable winegrowing practices in New Zealand this thesis revisits and extends the National Wineries' Survey which has provided a longitudinal time series of data from the New Zealand wine industry. A comparison of the New Zealand situation with that of the cool climate winegrowing regions (Becker, 1985; de Blij, 1985; Jackson and Schuster, 1987, 2001; Jones, 2012; Shaw, 1999) of Tasmania and Western Australia is also offered, and an examination of the broader international approach towards sustainable winegrowing schemes is also included. Cool climate wine regions are increasingly becoming concerned by the longer-term implications of climate change (Jones, 2005; Jones & Shultz, 2016; Moriondo, Jones, Bois, Dibari, Ferrise, Trombi & Bindi, 2013; Neethling, Petitjean, Quérol & Barbeau, 2017), and by focusing on the subset of cool climate wineries utilised in this thesis this offers the opportunity to investigate exactly what these wineries perceive as being the challenges that sustainable winegrowing and wine tourism currently face.

Three previous iterations of the New Zealand National Wineries Survey have been conducted in New Zealand by Hall and Johnson (1998), Christensen et al. (2004), and Baird (2012). This thesis marks the first time that this longitudinal survey has been expanded to include two other cool climate wine growing regions outside of New Zealand to provide an international context

through the incorporation of data from Western Australia and Tasmania. It also represents the first time that a cross national survey of this type has been conducted which examines wine industry perceptions within the twin domains of wine tourism and sustainability.

1.2 Cool climate winegrowing defined

Jackson and Schuster (1987, p.5) offered the following definition of the term cool climate within the context of viticulture:

[A cool climate is] one which will have the capacity to produce table wines of distinction. In such [cool climate] areas, there will be variability in quality between seasons which will cause some [wines] to be labelled good vintages, some average and some poor. This is a typical characteristic of cool climates.

Given the degree of sensitivity that grapes possess when considering the climatic conditions in which they are grown (Becker, 1985) the majority of studies into cool climate winegrowing focus on temperature variations which dictate whether or not a particular region is suitable for wine production (Anderson, Jones, Tait, Hall & Trought, 2012; Becker, 1985; de Blij, 1985; Jackson & Schuster, 1987; Jackson & Lombard, 1993; Jones & Davis, 2000). Suitability is measured using seasonal average temperatures dependent on whether the wine region is located in the Southern or Northern hemisphere (Jones, 2007; Jones et al., 2010). Whether these temperatures fall within acceptable upper and lower temperature limits dictates whether or not the region is regarded as a cool climate winegrowing region (Anderson et al., 2012; de Blij, 1985; Jackson & Schuster, 1987; Jones, 2007; Jones et al., 2010). These upper and lower limits “range from 13 to 24 °C, with winegrapes being limited to the 13-21 °C range, and [with] table grapes and fortified wines typically to the 21-24 °C range” (Jackson & Schuster, 1987, p.6). It is within these limits that the New Zealand, Tasmanian and Western Australian wineries who

constitute the sample population for this thesis fit, and these thereby form the core around which this thesis is based. This is important as cool climate wine regions are not immune from the implications of climate change, and need to take a proactive approach to this issue (Jones & Shultz, 2016; Moriondo, Jones, Bois, Dibari, Ferrise, Trombi & Bindi, 2013; Neethling, Petitjean, Quénol & Barbeau, 2017).

1.3 Wine tourism defined

Wine tourism is defined as “visitation to vineyards, wineries, wine festivals and wine shows for which grape wine tasting and/or experiencing the attributes of a grape wine region are the prime motivating factors for visitors” (Hall, 1996, p. 1), and is increasingly used by winegrowers as part of their business strategy. This strategy not only provides an umbrella for the various revenue streams that wineries engage in (such as cellar door sales, accommodation, events and wine and food festivals), but also encompasses a growing engagement with environmental issues such as biosecurity (Hall, 2003, 2005) and sustainability (Dodds, Graci, Ko & Walker, 2013; Flint & Golicic, 2009; Gabzdylova, Raffensperger & Castka, 2009; Kennedy, 2009). Wine tourism has long been a source of added value for many vineyards and winegrowers (Alant & Bruwer, 2004; Alonso, Bressan, O’Shea & Krajsic, 2015; Hall, Cambourne, Macionis & Johnson, 1997; Mitchell & Hall, 2006) with it also being regarded as a brand differentiator that enables wineries to meet consumers face-to-face and enabler of a long-term relationship with a product sampled at its place of origin (Alonso et al., 2015; Batra, 2008; Hall et al., 1997; Mitchell & Hall, 2004).

1.4 Sustainable winegrowing defined

Although sustainable winegrowing practices have the potential to supply added value to winegrowers, the reality is that substantial economic, social, environmental, political and

marketing issues exist with respect to sustainability and the business of wine. The definition of sustainability can be found in the 1987 Brundtland Report entitled *Our Common Future* where the term is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987, n.p.). To further consider the concept of sustainability within the context of viticulture and oenology, and what is jointly described here in this thesis as winegrowing, the definition extends to “growing and winemaking practices that are sensitive to the environment (environmentally sound), responsive to the needs and interests of society-at-large (socially equitable), and are economically feasible to implement and maintain” (California Sustainable Winegrowing Alliance, 2001, cited in Zucca et al., 2009, p. 190). However, as Goode and Harrop (2011, p. 87) state:

Sustainability risks being a rather nebulous, ill-defined concept that few winegrowers will be willing to adopt if it means a reduction in crop yield or quality or an increase in operating expenses. Persuading the average grower to switch to sustainable farming requires an assurance that there is something tangible to be gained other than simply a warm feeling from doing the right thing.

The key point of assurance noted by Goode and Harrop (2011) highlights that there are a complex variety of issues which cluster around the concept of sustainability. Within the context of wine production, sustainability issues have provided a rich stream of research (Alonso & Liu, 2012; Atkin et al., 2011; Baird, 2012; Carmichael & Senese, 2012; Casini et al., 2010; Flint & Golicic, 2009; Gabzdylova et al., 2009; Grimstead, 2011; Marshall et al., 2010). The associated dimensions of wine consumer behaviour (Baird, 2012; Barber et al., 2012; Bisson et al., 2002; Christensen et al., 2004; Cullen et al., 2013; Forbes et al., 2009, 2013; Hall & Johnson, 1997; Mitchell & Hall, 2006) alongside issues such as climate change (Galbreath, 2011; Hall, 2009; Nicholas & Durham, 2012; Point et al., 2012), environmental innovation

(Baird, 2012; Doloreux et al., 2013; Pickering et al., 2012), biosecurity (Hall 2003, 2005) and eco-labelling (Castka & Corbett, 2016; Delmas & Grant, 2014; Delmas & Lessem, 2017) represent important directions in which research into sustainable wine production is heading.

Underpinning this thesis is also the fact that the wineries surveyed are businesses that operate not only within the wine industry, but also within the tourism industry as well. This means that it is not only important to find out what the reality is that is being experienced by Australian and New Zealand winegrowers on the ground in terms of sustainable practices, but also to consider how wine tourism connects with innovation, adaptation and sustainability as this is an issue that historically has not been a major focus of wine tourism. This chapter will now move to examine both of these issues.

1.5 Sustainable tourism defined

Sharpley (2003) defines the concept of sustainable tourism to be the reduction of the negative effects brought about by tourism activities and encompasses all areas which tourists experience at a destination. These areas are all intrinsically linked to the economic, social and environmental aspects of tourism development and the continuous improvement required in order to ensure the functionality of each of these aspects (Briguglio, Archer, Jafari, & Wall, 1996; Sharpley, 2000; Vellas & Becherel, 1999; World Commission on Environment and Development [WCED], 1987). The WCED's 1987 *Brundtland Report* also underlines the importance of equity within these three areas by stating that "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, n.p.) is the cornerstone of any form of sustainable development. This includes the potential within the tourism industry to be a vehicle for job creation, not only for local workers, but also for migrant workers (Cukier, 2002). Advocating sustainable tourism development also takes a long-term view with regards to living standards and the rights of workers (Liu, Zeng & Lee, 2012), whilst also being cognisant of the needs of the wider local

community (Mitchell & Hall, 2005; Swarbrooke & Horner, 2004) that owners of tourism-related business engage with.

1.6 Sustainable wine tourism

Even though wine, as well as wine regions and businesses, is often promoted in terms of its environmental attributes, winegrowing is an industrial process with resource use and waste. In addition to water and land use winegrowing may also have substantial chemical inputs, such as biocides and fertilisers, and is also responsible for emissions, including from the transport of wine from vineyard to the end consumer, often based in foreign markets, referred to as “wine miles” (Hall & Mitchell, 2008, n.p.). The industrial dimensions of wine and its potential negative environmental externalities are distant from the portrayal of wine as an ‘authentic’ and ‘natural’ artisanal product. Nevertheless, there appears to be growing producer and consumer interest, including tourist interest, in sustainable wine (Grimstead, 2011). As a result many wineries and wine regions are not only seeking to make their wine production more sustainable but are also looking to use sustainable practices as a point of brand and product differentiation in an otherwise congested and highly competitive market (Carmichael & Sense, 2012; Hall & Gössling, 2013, 2016a).

Although designed to promote a unified industry wide benchmark for vineyards, wineries and other wine businesses to strive to achieve their individual goals in terms of sustainable practices, the adoption of initiatives such as industry sustainability schemes are important as they can be used in the promotion of wine products as well as national and regional wine tourism and wine trails (Kennedy, 2009). Because of its contribution to regional branding as well as significance for employment, winegrowing is often seen as an extremely important contributor to rural regional development (Hall & Gössling, 2016b). Such perceptions are only enhanced by the direct, i.e. visits to wineries, and indirect, i.e. purchase of local wine and food

in restaurant, role of winegrowing to tourism in such regions. Yet the development of more sustainable winegrowing operations, including the role of wine tourism, is not only dependent on the size and economics of individual wineries, but also on the ability of wineries to deal with inherent risks borne from engagement with visitors to vineyards and wineries, such as biosecurity risks (Hall, 2003, 2005). As a number of vineyards and wine regions have experienced, the introduction and spread of viticultural diseases and harmful vectors, such as phylloxera and Pierce's disease (Hall, 2003) could potentially eradicate the work done to encourage the adoption of sustainable practices and the innovations that may arise as a result of sustainability initiatives. This is particularly so in the New Zealand context where biosecurity has become a major focus of national agricultural policy and border control (Biosecurity New Zealand, 2018).

It has been suggested that there are three major benefits which are derived from cellar door sales, that of "distribution at low marginal cost, the development of brand equity, and the chance to add value" (Charters & O'Neill, 2001, p.7). Small wineries tasting room facilities form an important part in the overall wine tourism marketing strategy by drawing consumers' attention towards the products available, which is then used to translate this attention into direct sales, making cellar door sales and/or winery visits potentially lucrative over the long term (Alonso & Northcote, 2008). At the regional/destination level the high profile of some wines and wineries that attract tourists can provide other regional businesses opportunities through association with a quality product (Hall & Gössling, 2016b). Wine tourism can help differentiate a region's position in the tourism marketplace if connected with local wines and can also be integrated with broader branding strategies (Popp & McCole, 2016; Stavrinoudis, Tsartas & Chatzidakis, 2012). There is also some evidence that wine tourism can help extend the range of reasons for visiting a destination and extend length of stay and increase visitor

expenditure on local product (Hall & Gössling, 2016b). Therefore, rural regions in areas that are suitable for winegrowing are often seen to encourage the development of wine tourism and related activities such as food and cultural tourism (Hall, 2013; Hall & Gössling, 2016b).

New Zealand government statistics suggest that, on average, 27 per cent of all international holiday travelers visit a winery or participate in wine tourism activities annually in New Zealand (New Zealand Winegrowers, 2018c). The market is lucrative, with the 712,135 international tourists who participated in wine tourism to the year ended June 2017 spending a total of NZ\$ 3.8 billion (New Zealand Winegrowers, 2018c). The average spend of wine tourist is also significant; Tourism New Zealand (2014) states that this average figure was NZ\$3,700 compared to the NZ\$2,800 average spend of all visitors. There is also a significant high value segment in the wine tourism market with over 22 per cent of international wine tourists claiming to spend over NZ\$5,000 on their visit to New Zealand (Tourism New Zealand, 2014).

Significantly, 94 per cent of international wine tourists to New Zealand are independent travelers (Tourism New Zealand, 2014), thereby reinforcing the capacity of such visitors to travel to rural regions with their length of stay being significantly longer, with an average of 18.6 days, than the visitor average of 14.4 days (Tourism New Zealand, 2014). Nevertheless, the bulk of winery visitors are domestic tourists, many of whom are day-trippers from urban centres, with the profile of the winery visitor varying according to the wine region as well as the winery as a result of locational and accessibility factors (Baird, 2012).

Similarly, Australian wine tourism figures also indicate a market which has undergone significant growth. Western Australia attracts over 400,000 wine tourists per year (Tourism Western Australia, 2018). Capitalising on this interest in wine tourism has led to the

development of a state-wide strategy entitled *Taste 2020*, designed to promote both Western Australian wine and food tourism. Interest in Tasmanian wines has also seen over 300,000 international visitors pass through regional cellar doors over the twelve months prior to June 2017 (Wine Tasmania, 2018a). This equates to 23 per cent of all tourists over this period who visited Tasmania (Wine Tasmania, 2018a).

1.7 Wine tourism and innovation

Innovation is increasingly seen as an important element of wine tourism, particularly as environmental concerns regarding sustainability and climate change become major issues for wineries (Brannon & Wiklund, 2014; Doloreaux et al., 2013; Ferreira & Muller, 2013; Hall & Mitchell, 2008; Lenzi, 2013; Ohmart, 2008a). Examples of innovation have occurred in terms of improved sales and marketing methods (Alonso & Bressan, 2013; Doloreux et al., 2013; Hira & Bwenge, 2011; Pickering et al., 2012; Taplin & Breckenridge, 2008) and process techniques (Baird, 2012; Bessant et al., 2009; Doloreux et al., 2013; Giuliani et al., 2011; Ohmart, 2008b; Yuan et al., 2006). Early studies on innovation include the work of Hoerner (1995) which examined the competitive advantage which could be gained through adopting innovative practices utilising market research within the wine industry. Examining how innovation serves to improve wine production techniques (Aylward, 2002; Gilinsky et al., 2008) has also led into research into the effect of innovation on wine exports (Aylward, 2004a, 2004b; Olavarria et al., 2009) and the levels of knowledge sharing which exist between wine producers (Aylward, 2005a; Chiffolleau, 2005; Pickersgill & Edwards, 2005) including in the development of wine trails (Preston-Whyte, 2000). Studies have also been conducted which attempt to provide a benchmark for successful wine tourism regions (Getz & Brown, 2006) and review how successful tourism developments have benefited from the implementation of organisational, production or process changes (Hjalager & Madsen, 2018).

Possibly the most prominent stream of innovation related writing is with respect to collaboration and co-operation in wine clusters and networks (Aylward, 2002; Aylward, 2005a, 2005b; Chiffolleau, 2005; Cusmano et al., 2008; Hira & Bwenge, 2011; Taplin & Breckenridge, 2008). The level of institutional support which is provided by regional and national governing bodies has been recognised as serving to increase levels of collaboration (Aylward, 2005; Hira & Bwenge, 2011; Karagiannis & Metaxas, 2019; Simpson et al., 2005; Stasi et al., 2016; Zahraie et al., 2016), although regulatory demands can also impede relationship building (Chong, 2014).

The geographical proximity of members of wine clusters is another important factor for successful knowledge sharing between networks (Gilinsky et al., 2008; Giuliani et al., 2011), including specifically in relation to wine tourism (Hall, 2003, 2004; Hall et al., 1997). However, not all wineries are working cooperatively. Mortensen and Marks (2003) observed that the failure of product innovations resulted in a loss of confidence amongst producers, which then went on to affect the rates at which future innovations were adopted by other wineries within the network. Karagiannis and Metaxas (2019) note that the protection of business reputation and brand identity was paramount amongst network members as no one wanted to be associated with an innovation which had failed to succeed.

It is also important to note that Tasmanian and Western Australian wineries who take part in sustainable winegrowing programmes are doing so voluntarily. This is not the case for their New Zealand counterparts, however. Due to the mandatory membership required by New Zealand wine producers to be part of the Sustainable Wineries New Zealand (SWNZ) programme (New Zealand Winegrowers, 2018a), the very nature of the OECD et al. (2005) definition of innovation suggests a potential dilemma for New Zealand wine tourism. On one hand, for example, you have the approach taken within the SWNZ scheme whereby the sustainable processes methods and products produced must meet a pre-determined criteria

(New Zealand Winegrowers, 2018a), while on the other there are many wineries which pre-date the introduction of SWNZ in 1995 (New Zealand Winegrowers, 2018a), and arguably have already created their own innovations without external intervention (Baird, 2012). Furthermore, tourism and innovation policies in New Zealand appear to have little formal inter-relationship; Hall (2009, p. 15) suggests that “it is possible that one of the reasons for the lack of recognition of tourism in innovation policy is that it is perceived as an industry that is not particularly innovative.”

1.8. Research aim

The primary aim of this thesis is to examine wineries’ perceptions towards wine tourism and sustainable winegrowing practices in New Zealand. In order to provide a deeper understanding and contextualisation of the New Zealand situation, a secondary aim is to provide a cross-national comparison of winegrowers in cool climate wine regions (de Blij, 1985; Jackson & Schuster, 1987) to enable an investigation of their perceptions concerning sustainable winegrowing.

These research aims have led to the formulation of six subsidiary questions. These are listed as follows:

1. Does the content analysis of international sustainable winegrowing programmes suggest that changes in governance and regulatory measures within the wine industry are influencing cool climate wine producers to adopt sustainable wine production practices?
2. Are cool climate wineries that engage in sustainable wine production practices more innovative than those who do not?
3. Do cool climate wineries that engage in sustainable wine production practices value the importance of social justice issues which affect their workers?

4. Do cool climate wineries that engage in sustainable wine production practices view eco-labelling as important in terms of differentiating their wine products from other existing market offerings?
5. Do cool climate wineries that engage in sustainable wine production practices have an adaptive or mitigative approach towards dealing with the effects of climate change?
6. Are cool climate wineries that engage in sustainable wine production practices doing so in order to enhance their relationships with consumers and wine tourists?

This chapter will now turn to discuss the importance, value and contribution of this thesis.

1.9 Importance of this research

The importance of this research centres on understanding the adoption of sustainable winegrowing practices amongst New Zealand and cool climate wine producers. There are currently several gaps which currently exist within this research domain in relation to sustainable winegrowing (refer to Figure 1.1). These gaps exist in the areas of the governance of sustainable winegrowing programmes (Moscovici & Reed, 2018), consumer behaviour (Forbes & Kennedy, 2016; Fountain, 2018; Hall & Prayag, 2017), biosecurity (Hall, 2003, 2005a), eco-labelling (Berghoef & Dodds, 2013; Castka & Corbett, 2016), climate change related environmental issues (Galbreath, 2015, 2016; Mozell & Thach, 2014) and environmental innovation (including how winegrowers are adapting to climate change) (Doloreux & Lord-Tarte, 2013; Hall, 2009).

An examination of these research gaps shown in Figure 1.1 is important as there are different interpretations of what constitutes sustainable winegrowing in different wine regions. For example, the 2010 New Zealand National Wineries Survey (Baird, 2012) indicated that there were significant research gaps which existed in the areas of biosecurity and sustainable wine

production. This was particularly surprising given the importance of these environmental aspects to areas such as wine tourism and wine marketing. Aside from prior research (Baird, 2012; Christensen et al., 2004; Hall, 2003, 2005a; Gabzdylova et al., 2009) the lack of publications in this area revealed not just a research gap, but a large void.

Addressing the gaps in the extant literature, coupled with the fact that cross-national studies such as those in this thesis are rare, provides added value to this thesis. Further value is also derived through the identification of the role of governance mechanisms and regulation in creating differences between winegrowers. Analysis of the differing regional/national approaches to wine and sustainability also provides further depth and additional value to this research. Examining these dimensions will also allow for an exploration of the external mechanisms such as government activities in both the country in which the winegrower is located as well as those countries that they export to. As a result of this approach this thesis makes a significant empirical contribution to the extant sustainable winegrowing literature not only within the Australian and New Zealand wine industries but, because of the novelty of such research, at an international level outside of these countries as well.

The originality and value of this research

Figure 1.2 illustrates how this thesis builds on the existing longitudinal time series of the previous three iterations of the New Zealand National Wineries Survey (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1998). It is important also to note that questions regarding sustainability and innovation were included for the first time in the 2010 New Zealand National Wineries Survey. The survey template developed over these previous three New Zealand based survey iterations has served to inform not only the 2015 New Zealand survey, but also the 2016 Tasmanian and Western Australian surveys. This allows for a comparative international dimension to occur which has not been part of this survey series

before, and also represents the first time that an international comparative study has been undertaken within the realm of sustainable wine tourism.

The value of cross-national research

The value of cross-national comparisons as an analytic strategy has been underlined in previous research (Hantrais & Mangen, 1996; Kohn, 1987), and is perhaps best summarised in the context of environmental studies by Llausàs and Roe (2012, p. 642) who state the following:

Cross-national research, where concepts developed in one country are adapted for research in another, can provide knowledge for academics, policy makers and planners in both countries. Such examination can aid the development of new thinking, new policy approaches, identify weaknesses in the existing systems and open up opportunities for collaborative work.

Demonstrating how this thesis will contribute to the existing body of research on sustainable wine practices will now be shown. This will be addressed first by discussing the aim of this research and secondly through explaining how this study offers an important contribution to this field of research.

Figure 1.1 Current research gaps in the sustainable winegrowing literature

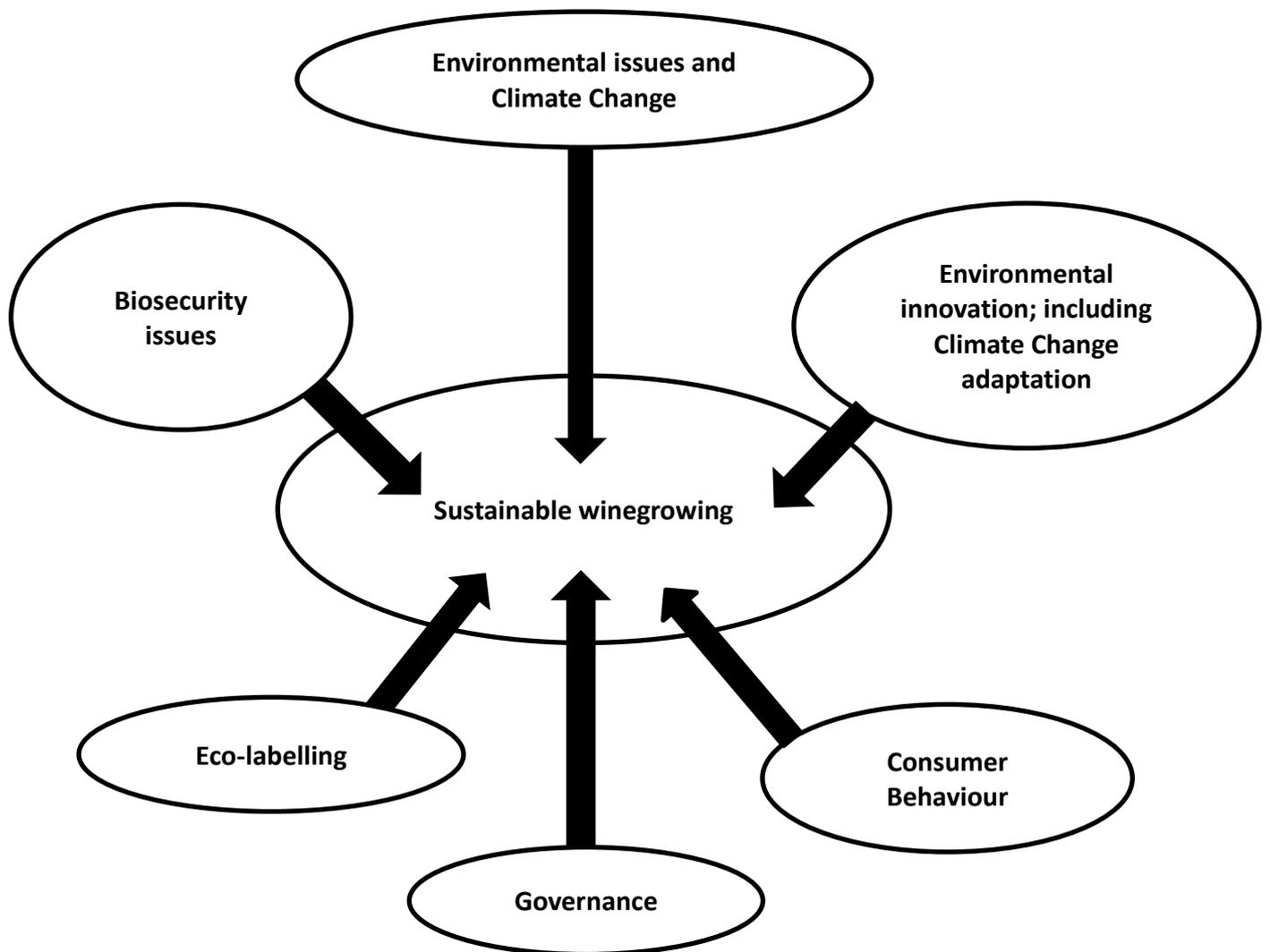
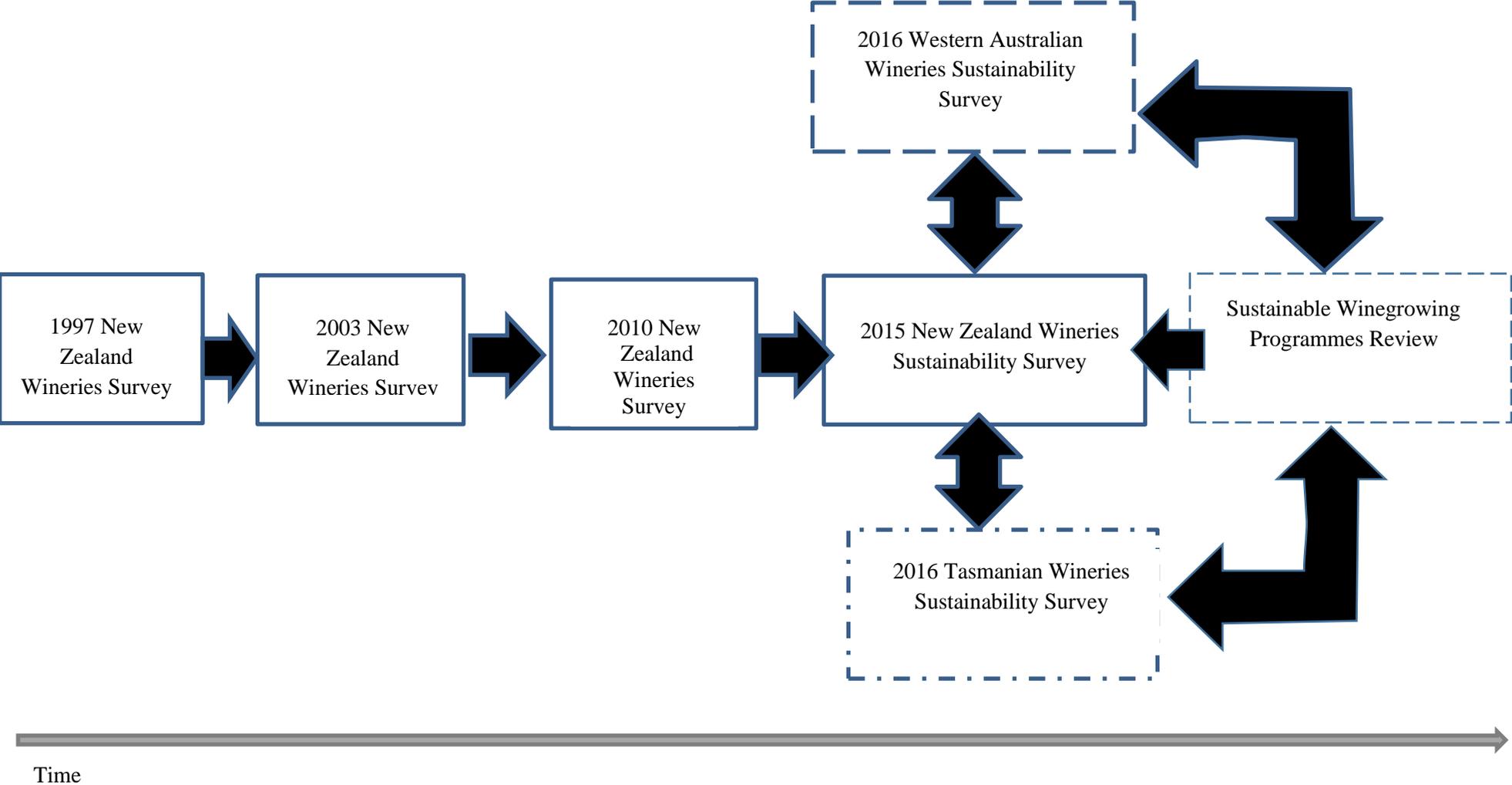


Figure 1.2: Originality and value of this research



1.10 Thesis outline

This thesis is comprised of nine chapters. Chapter 2 sets the scene for this study by providing an overview of international sustainable wine and wine tourism research, while New Zealand based sustainable wine and wine tourism research is reviewed in Chapter 3. This particular chapter gives an overview of the historical context behind the New Zealand wine industry and how regulatory changes have paved the way for wine tourism. It also offers a perspective on the current position of wine within the New Zealand national brand. Both of these chapters are divided into sub-sections which provide the foci for this thesis; these cover winery characteristics, winery visitors, biosecurity, sustainability, innovation, cooperation, networks and marketing. Two key reasons also informed this approach; the first reason for this was to provide justification for the questions which were asked in the 2015 New Zealand, Western Australian and Tasmanian Wineries' Sustainability Survey. The second reason was to show how these questions relate to international wine tourism literature.

Chapter 4 discusses the methodology used in this study, and covers survey design, data collection, procedures utilised and ethical considerations. Chapter 5 then moves to showcase the content analysis that was conducted of international sustainable winegrowing programmes worldwide. The findings of this content analysis helped to guide a number of the new questions that were introduced into the sustainability section of the survey; these add further depth.

The findings of the 2015/2016 New Zealand, Western Australian and Tasmanian National Wineries' Sustainability Survey are covered in the next two chapters. Chapter 6 covers the New Zealand based findings and also links these to longitudinal comparisons of the data which was available from the three previous New Zealand based iterations of the survey in 1997, 2003 and 2010 (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997). Chapter 7 presents the Tasmanian and Western Australian based survey findings, and also links these to the results of the 2015 New Zealand based survey to allow for comparative analysis.

A discussion of the overall combined survey findings follows in Chapter 8. Chapter 9 provides a summary of this thesis and draws conclusions on what the current view looks like from the supply-side perspective regarding wine tourism in New Zealand, Tasmania and Western Australia as well as highlighting some potential directions for future wine tourism research.

1.11 Chapter summary

This introductory chapter provides an overview for both the context of this thesis and the value that this study contributes to the existing body of research into wine tourism and sustainable winegrowing practices. The reasons for conducting both a longitudinal time series study and an international comparative study are outlined, and defining the key concepts involved within this thesis such as cool climate winegrowing, wine tourism and sustainability provides context for the chapters which follow. Underlining the fact that New Zealand, Tasmanian and Western Australian wineries are all in the business of both tourism and wine production sets the scene for discovering how representative the current situation in each of these regions is of global wine market in terms of supply-side attitudes towards sustainability and wine tourism. This thesis will now examine the extant international research regarding sustainable wine tourism in Chapter 2 before turning to examine the history of sustainable wine tourism research in New Zealand in Chapter 3.

Chapter 2

International research on wine tourism and sustainable winegrowing practices

2.1 Chapter Introduction

Global research within the dual domains of wine tourism and sustainable winegrowing practices has grown from simply covering predominately Old World wine trails (Alonso & Liu, 2012; Charters, 2009) to also focusing on the product-related dimensions that both concepts cover (Bonn, Cronin Jr & Cho, 2016; Capitello & Sirieix, 2019; Getz, 2000; Hall & Sharples, 2008; Telfer, 2000a, 2000b, 2001a, 2001b, 2003). This change in focus has not only drawn attention to the positive benefits of wine tourism; it has also underlined the unique set of challenges faced by individual wine regions when attempting to maximise these benefits (Alonso & Liu, 2012; Mitchell & Hall, 2006) including the desirability for sustainable winegrowing practices (Gilinsky Jr., 2016; Mariani & Vastola, 2015).

This chapter will view wine tourism and sustainable wine production research through the adoption of a supply-side perspective and augment this approach with research into what constitutes wine tourist consumer behaviour. Four sections will provide the framework for reviewing this perspective. First, extant research is examined which focuses on the characteristics that make up winery profiles and a profile of the type of visitor that is interested in wine tourism experiences. Second, literature that exists concerning sustainable wine production and biosecurity related issues is highlighted, and the relationship between these two dimensions and wine tourism is explored. The third section discusses prior research within the

domains of innovation, networks and co-operation. The chapter then concludes by examining literature that explores the relationship between tourism marketing and the wine industry.

2.2 Winery Profile

When attempting to analyse the various factors which align to make up the overall winery visitation experience it is vital to recognise that tourists are experiencing much more than just the enjoyment of a glass of wine (Charters & Ali-Knight, 2000, 2002; Cohen & Ben-Nun, 2009; Dodd, 1995; Hall & Winchester, 2000; Hall et al., 2000; Richardson, 2004; McCutcheon et al., 2006; Telfer & Sharpley, 2008). When considering the importance of winery profiles in terms of tourism research Cohen and Ben-Nun (2009, p. 23) contend that “to market wine destinations and wine tourism products, it is essential to understand who winery visitors are by understanding their perceptions regarding the important attributes within wineries and wine regions which might include a wide range of attractions.” Factors which serve to intensify the overall wine tourism experience can also include the local setting in which the winery is based (Getz, 2000; Telfer, 2009; Gómez & Molina, 2012; Jones, Singh & Hsiung, 2015; Joy, Belk, Charters, Wang & Peña, 2018; Page & Getz, 1997); this in turn can lead to visiting other complementary attractions within the same geographical area (Akdag, Oyan & Kastenholz, 2018; Cogan-Marie, Charters & Velikova, 2016; Cohen & Ben-Nun, 2009). The variety of characteristics that make up winery profiles in terms of international wine tourism research primarily focus on geographical location, winery size and production capacity. The presence of additional value-based propositions in the form of whether cellar door sales and in-house tasting facilities are available onsite is also of importance and will also be considered. Each of these aspects will now be examined in turn.

Winery and Location

The importance of the relationship between the winery and its geographical location goes beyond merely being able to produce wine. Alonso and Liu (2010) examined the developmental stages of emergent wine regions in Western Australia and found that although some winery owners exhibited initial confidence that the combination of wine, tourism and hospitality would work in relative harmony, the reality in fact was very different (Alonso & Liu, 2010). Findings from this study revealed that “challenges regarding a lack of cohesion and fragmentation among operators, as well as financial limitations, or the geographic isolation of some wineries/regions” (Alonso & Liu, 2010, p. 257) hindered regional wine tourism development. Further exploration into cultural and geographical phenomena saw Mitchell et al. (2012) adopt “Bonnemaison’s cultural systems approach”. This approach focused on a comparison of rural cultural systems and the production and consumption of wine tourism in Champagne, France and the Margaret River wine region in Australia. Mitchell et al. (2012) noted the importance of local mythologies that were ingrained within the cultures of both regions, and that it was not only the link to the land that was the driving force behind successful wine tourism ventures. The stories behind the chosen location and the wine production processes used were intrinsic to engaging wine tourists as part of the overall winery experience (Mitchell et al., 2012).

Studies into the effect of the distance of a winery from its nearest major geographical centre (Bruwer, 2003; Getz & Brown, 2006; Jones et al., 2015; Soontiens, Dayaram, Burgess & Grimstead, 2018) have primarily centred on whether increased visitation by wine tourists is enabled by the relative proximity of a gateway city or town. The focus of prior studies within this area has also examined the time spent by tourists on wine tourism related activities and the duration of visit (Carmichael & Smith, 2004; Deery et al., 2005) – be this merely daytrips or

longer stays in local accommodation facilities. The lack of adequate facilities for all patrons (including those with patrons with disabilities and visual impairments) has been cited by Beames (2003) as the primary reason why tour operators in Australian wine regions have neglected to incorporate wineries as part of their tour package offerings. On this note Beames (2003, p. 212) highlights the “need to address the provision of infrastructure in order to give tourists a broader holiday experience and extend the length of stay and the value of the holiday spend”.

Opportunities presented by wine tourism to allow wine tourists to experience the cultural, social, and environmental aspects of their visitation experience have been noted by López-Guzmán et al. (2011) who researched Spanish wine routes. Findings from this study concerning regional winery visitation revealed that pairings of local food and wine was seen to be a key attraction for winery visitors (López-Guzman et al., 2011). These findings also support the views put forward by Crispin and Reiser (2008) and Thompson and Prideaux (2009) who found that the overall sensory experience for wine tourists was important for providing a closer bond with the local traditions involved in wine production which were unique to particular regions. Getz (2000) has also noted that developing this location-based bond created through experiential factors for wine tourists was fundamental in providing a focus for regional wine tourism marketing campaigns.

Winery Size

Size and location are critical aspects to the marketing strategies implemented both on and off-site for wineries (Barber et al., 2008). Examination of such strategies used by United States based urban and rural wineries formed the basis of research by Barber et. al (2008) who argued that urban wineries adopted an educational focus as a wine tourism marketing strategy; rural wineries, conversely, utilised elements of escapism as part of their overall strategies (Barber et al., 2008). The success of wine-related attractions was also found by Frochot (2000, 2003) to

be directly linked to the ability to attract visitors to the cellar door. Small scale wineries were noted by Frochot (2000, 2003) as having more success than their large-scale counterparts in attracting visitors wine tourists. Frochot's (2000, 2003) research into small scale French wineries found that the level of intimacy provided through direct contact with the winemaker was a very important factor for visitors in terms of their overall winery visitation experience; these were also two factors that larger wineries simply could not replicate due to the size of their operations (Frochot, 2000, 2003).

Ownership status

The ownership status of a winery has been noted as being fundamental to the amount of resources that wineries have to be able to engage in wine tourism promotion (Edwards, 1989; Jones, Singh & Hsiung, 2015; Stewart et al., 2008; Williams & Kelly, 2001). Smaller operations, which may be family-owned, tend to approach entry into the wine industry with a different set of goals, values and lifestyle choices than larger corporate wineries (Getz & Carlsen, 2000). This point is particularly prevalent when considering the twin dimensions of growth and profitability (Getz & Carlsen, 2000), whereby a smaller winery would not be able to achieve the turnover of a larger operation due to resource and production capacity constraints. This disparity has seen Simpson and Bretherton (2004) argue that many smaller wineries tend to become complacent in their service delivery and refuse to become involved with potentially like-minded wineries within a wine region. This has been noted as being a barrier to the sharing of ideas and innovative practices amongst these firms (Simpson & Bretherton, 2004).

The integration of wine tourism into the overall vision and business strategy of Western Australian wineries formed the basis for research by Alonso and Northcote (2010). This study found that the size of the winery concerned was important in terms of their strategic intent, with smaller Western Australian wineries seeing the potential value in engaging in wine

tourism whilst larger wineries were more sceptical (Alonso & Northcote, 2010). In order to negotiate this degree of scepticism Mancino and Presti (2012) advocated the adoption of educational programmes in order to demonstrate to wineries the potential offered by wine tourism to provide added value to existing business strategies. Thomas (2005) noted the significance of both the employment generated by implementing wine tourism related activities along with the increased spending of winery visitors. In terms of regional economies these activities were viewed as being critical for keeping the cycle of money local within the region concerned and encourage further wine tourism marketing endeavours (Thomas, 2005).

Cellar door sales

It has been suggested that there are three major benefits which are derived from cellar door sales, that of “distribution at low marginal cost, the development of brand equity, and the chance to add value” (Charters & O’Neil, 2001, p. 7). Small wineries tasting room facilities form an important part of the overall wine tourism marketing strategy by drawing consumers’ attention towards the products available (Azzurro, Richards & Bruwer, 2017; Bruwer, Charters & O’Neil, 2001; Hall & Prayag, 2017; Lockshin, Saliba & Hirche, 2015). This is then used to convert attention into direct sales, making cellar door sales and/or winery visits potentially lucrative over the long term (Alant & Bruwer, 2004; Alonso & Northcote, 2008; Loubser, 2004). At the regional/destination level the high profile of some wines and wineries that attract tourists can provide other regional businesses opportunities through association with a quality product (Charters & O’Neil, 2001). Wine tourism can help differentiate a region’s position in the tourism marketplace if connected with local wines and can also be integrated with broader branding strategies (Byrd et al., 2016; Gómez, Lopez & Molina, 2015; Popp & McCole, 2016; Stavrinoudis, Tsartas & Chatzidakis, 2012). There is also some evidence that wine tourism can help extend the range of reasons for visiting a destination, extend the length of stay and increase visitor expenditure on local product (Charters & O’Neil, 2001). Therefore, rural regions in

areas that are suitable for winegrowing are often seen to encourage the development of wine tourism and related activities such as food and cultural tourism (Baird & Hall, 2014; Charters & O'Neil, 2001).

Charters and O'Neill (2001, p. 14) have acknowledged that "it is important to stress that the key areas of winery performance in this relationship [with winery visitors] are responsiveness and contact – which relate directly to the customer's relationship with staff at the cellar door". Further support for this perspective has seen Batra (2008, p. 275) underline the critical nature of this relationship through the following statement:

Wine tourism is seen as a brand differentiator. It enables wineries to meet their consumers face-to-face and gives them an opportunity to raise the profile of their products in a customer's mind. Customers may then develop a long-term connection with a product that they have sampled at its place of origin.

Tasting room facilities at small wineries have been credited with helping to draw the wine tourist's attention to exactly what products a particular winery specialises in producing (Barber et al., 2008). The lucrative nature of direct to consumer cellar door sales has also been noticed as an important tool in establishing brand loyalty amongst recent winery visitors (Alonso & O'Neill, 2009; Azzurro, Richards & Bruwer, 2017; Santos, Ramos & Almeida, 2017). An example of this phenomenon was studied by Alonso and O'Neill (2009) in the context of Spanish wineries. They discovered that cellar door sales not only served to increase visitors' interest in wine brands but could also be used as a long-term marketing strategy to develop brand loyalty amongst customers long after they had visited the winery concerned (Alonso & O'Neill, 2009). However, it has also been seen that such strategies cannot be completely effective if the reputation of the wine itself is not held in high regard by the consumer to begin with (Velikova, Charters & Cogan-Marie, 2016).

Surveys held at the cellar door designed to uncover more about the motivations which drive wine tourist visitation have proved to be problematic (Alebaiki & Lakovidou, 2011; Bruwer, Prayag & Disegna, 2018; Bruwer & Rueger-Muck, 2018; Cohen & Ben-Nun, 2009). Cohen and Ben-Nun (2009) have been critical of cellar door surveys, suggesting that they fundamentally missed examining the perceptions and behaviours of non-visitors. This is of particular interest when considering the current stream of research into the motivations of Generation Y and millennial wine tourists and their expectations with regard to the cellar door experience (Bruwer, Lesschaeve, & Campbell, 2012; Fountain & Lamb, 2011; Nella & Christou, 2014; Nowak, Thach & Olsen, 2006; Pomarici & Vecchio, 2014). Indeed, Cohen & Ben-Nun (2009, p. 23) underline the need for more robust cellar door surveys by stating that “this part of the population might include, for example, a young generation of who do not necessarily visit wineries or cellar doors but might become the next generation of wine tourists.” Getz and Brown (2006) also point towards the importance of cellar door surveys for providing direct customer feedback from visitors to enable wineries to determine exactly which areas require improvement in terms of service levels.

Tasting room facilities

The importance of tasting room facilities for creating and maintaining an emotional attachment between winery visitors and wine brands (Olsen and Thach, 2005) has been noted as being one of the key challenges for wineries to negotiate (Jolley, 2002). The establishment of brand loyal post-visit purchase behaviour was found by Jolley (2002) as existing in only one-third of winery visitors studied. The effect of charging of tasting room fees as either a set fee for tasting or a percentage fee based on the amount of wine consumed has also proven to be a contentious subject, created a rich stream of research in this area (Alonso et al. 2008; Bruwer et al., 2012; Dodd, 1995; King & Morris, 1997b; McNamara & Cassidy, 2015; O’Neill, Palmer & Charters, 2002; Thomas et al., 2010; Travers, 1999; Vlachvei & Notta, 2009; Wilson, 2016).

Evidence of the value of winery tasting rooms in terms of a direct-to-consumer retail channel was the basis of Bruwer et al.'s (2012) research into Canadian wine tourists and the establishment of long-term brand loyalty. To further support this point, Nowak et al. (2006) found that the positive emotions which visitors experience in tasting room facilities are also critical in terms of the creation of brand loyalty. The experiential aspects of a tasting room experience are also fundamental to encouraging repeat winery visitation (Azzurro, Richards & Bruwer, 2017; Bruwer et al. 2015; Bruwer et al. 2018; Bruwer & Rueger-Muck, 2018; Madonna, 1999). This is an area that Bruwer et al. (2012, p. 57) contend needs further research in terms of how tasting rooms serve “as a multiplier of the winery’s future wine sales to the same consumers ... and exactly which wine tourism activity factors the strength of this multiplier effect are contingent upon.”

The educational aspects of a winery tasting room experience have been shown to perform a crucial role in the overall wine tourism experience (Byrd, Canziani, Hsieh, Debbage & Sonmez, 2016; Jones, Singh, & Hsiung, 2015; Santos, Ramos & Almeida, 2017; Wilson, 2016). Vlachvei and Notta (2009) focused on researching wine routes in Greece to discover what motivated visitors to undertake winery tours. Key findings in this study indicated that meeting the winemaker, learning about the production process, tasting and then being able to purchase the wine onsite were the main sources of motivation (Vlachvei & Notta, 2009). An improved business reputation, increases in sales and extra publicity for the wineries concerned were notable as other additional benefits enjoyed by producers as a direct result of wine tourism (Vlachvei & Notta, 2009). Educating wine consumers through tasting room experiences has actively encouraged appreciation for the wine industry (Ali-Knight & Charters 1998, 1999, 2001; Ali-Knight & Pitt, 2001; Bruwer et al., 2015; Byrd et al., 2016; Dodd 1995; Jones et al, 2015; Macionis 1994, 1996; Quadri-Felitti, & Fiore, 2016). Opportunities offered in terms of being able to taste the products on offer through a tasting room situation has also helped to

combat consumer reluctance towards purchasing unknown wine brands in retail situations (Bruwer et al., 2015; Byrd et. al, 2016; Dodd, 1995; Hall & Mitchell, 2008).

2.3 Products

Additional streams of revenue provided by the sale of both wine-related or regionally associated products onsite offer wineries another means with which to engage wine tourists (Barber et al., 2008; Carlsen & Boksberger, 2015; Dodd, 1995; Dodd & Bigotte, 1997; Dodd & Gustafson, 1997; Telfer & Hashimoto, 2000; Jarvis, 2002a, 2002b; Jarvis & Hoffman, 2002). Company branded merchandise and regional merchandise are the two types of products which typically dominate shelf displays at the cellar door (Hall & Mitchell, 2008). Barber et al. (2008) found that company brochures featuring regional promotional material were also an important tool in the reinforcement of regional wine tourism attributes in the mind of the wine tourist. Take-home merchandise such as winery brand glasses can also further reinforce this memory of the cellar door experience post-visit (Barber et al., 2008).

2.4 Services

Service quality is a fundamental point of difference in terms of the overall experience wine tourists receive (Lee, Madanoglu & Fritz, 2018), and is used as a selling point by wineries in order to differentiate their product from others within the marketplace (Charters & O'Neill, 2000, 2001; Dodd & Gustafson, 1997; Fraser & Alonso, 2003; Fuller, 2002; Getz et al., 1999; O'Neill & Charters, 1999, 2000; O'Neill & Palmer 2004; Pan et al., 2008; Telfer 2001a). Charters and O'Neill (2001) underline the importance of service quality at the cellar door as it offers wineries three distinct benefits; these benefits are the opportunity to lower the cost margins associated with distribution, build brand equity and add value to the existing product offering (Charters & O'Neill, 2001).

The range of services available to potential wine tourists not only include winery tours that provide the opportunity to engage in wine tasting at the cellar door (Bruwer et al., 2015; Charters & O'Neill, 2000, 2001; Dodd & Beverland, 2001; Kendziorek, 1994a, 1994b, 1994c, 1994d; Lockshin & Knott, 2009; O'Neill & Charters, 1999, 2000; Pan et al., 2008; Singh & Hsiung, 2016). The pairing of local wine and food at onsite restaurants has grown in popularity (Alonso, Bressan, O'Shea & Krajsic, 2015; Cogan-Marie, Charters & Velikova, 2016; Singh & Hsiung, 2016), and wineries have also entered the market for hosting functions and conferences (Jones, Singh & Hsiung, 2015). Onsite accommodation for guests has been cited as being a vital aspect of the winery experience (Akdag et al., 2018; Alonso et al., 2015; Getz, 2000; Taplin, Nguyen, & Lee, 2016), especially for those wine tourists who may have overindulged in sampling their hosts' products. Festivals and events have grown in importance as cross-promotion involving entertainment has become increasingly intertwined with the regional marketing of local wine and food endeavours (Bruwer & Kelly, 2015; Gómez, González-Díaz & Molina, 2015; Houghton, 2001, 2002; Lee, Sung, Suh & Zhao, 2017; Yuan et al., 2005).

Investigations into the effect of service quality from a regional perspective on the intention of wine tourists provided the focus for Charters and O'Neill's (2001) study of the Margaret River and Barossa Valley wine regions in Australia. Whilst it was found that there were regionally-based differences which served to direct the intentions of wine tourists, the sets of customers studied in each region found that overall satisfaction with the service received at the cellar door was a key determinant in both repeat purchase behaviour of wine brands post-visit (Charters & O'Neill, 2001). Service quality also dictated whether tourists returned to the winery concerned in the future and recommended the experience to others (Charters & O'Neill, 2001).

Facilities

The provision of a variety of facilities onsite is an important drawcard for wineries to further engage with wine tourists. Facilities not only take the form of wine caves and barrel halls; they can also include educational displays which help to demystify the wine production process (Byrd et al., 2016; Carlsen & Bokasperger, 2015). This educational element coupled with live winemaking demonstrations allows wine tourists to meet the winemaker and learn first-hand the techniques that were used for the production of wine which is then available for purchase at the cellar door (Alonso et al., 2008; Bruwer, Prayag & Disegna, 2018; Bruwer et al., 2012; Dodd, 1995, 1999, 2000; Hills, 1998; King & Morris, 1997b; O'Neill, Palmer, & Charters 2002; Travers, 1999; Vlachvei & Notta, 2009). The setting in which the winery itself is located - variously known as either a "winescape" (Peters, 1997, as cited in Hall et al., 2000) or by the terminology of "terroir" (Hall & Mitchell 2002a, p. 69) is also a significant factor in motivating winery visitation (Getz, 2000; Brown & Getz, 2005; Brown & Smith, 2010; Bruwer, Gross & Lee, 2016; Quintal, Thomas & Phau, 2015; Schiefer & Fischer, 2008).

Services for the disabled

Accessibility of facilities at wineries to all patrons is an area that has presented challenges as wine tourism has grown. The need to ensure ease of access for patrons who may suffer from disabilities has uncovered that the lack of adequate facilities for all patrons (including those with patrons with disabilities and visual impairments) exist (Beames, 2003). This was noted by Beames (2003) a primary reason why tour operators in Australian wine regions neglect to include wineries within the scope of their tour packages. In order to meet this challenge wineries have improved wheelchair access and provided services such as improved signage and hearing devices for those with visual and hearing impairments (Bonn, Cho, Lee & Kim, 2016). Failure to facilitate

these improvements puts vineyards at risk of losing potential customers to their competitors who provide easily accessible facilities (Beames, 2003).

2.5. Visitor profile

Viewing wine tourism from the visitor's perspective in an attempt to gain an understanding of what drives visitation behaviours is an area that is rich in research studies (Alonso et al., 2007a, 2007b, 2007c; Barber et al., 2010; Bruwer & Rueger-Muck, 2018; Byrd et al., 2016; Carlsen & Ali-Knight, 2004; Carlsen & Charters, 2004; Carlsen & Dowling, 1998; Getz & Carlsen, 2008; McCutcheon et al., 2009; Morris & King, 1997b; Patterson, 2000; Quadri-Felitti & Fiore, 2015; Treloar et al., 2004). Components of visitor behaviour which have featured in this research include demographic characteristics, the motivations behind winery visitation and group behaviours, and whether it is indeed possible to arrive at a definable set of attributes which constitute the typical wine tourist.

Demographic characteristics

The notion of the typical wine tourist has caused some contention within wine tourism focused demographic research (Folwell and Grassel, 1995; O'Neill & Charters, 2000; Treloar, 2002a, 2002b; Williams & Dossa, 2003; Ye, Zhang & Yuan, 2017). Examples of this include Folwell and Grassel's (1995) study of Washington State wineries and their belief that wine tourists were middle aged with above average income. Williams and Dossa (2003) found that in British Columbia what was the typical wine tourist was actually someone who was younger, a non-resident, educated and received a below average income. Age and gender are other demographic characteristics which have featured in wine tourism research (Akdag, Oyan & Kastholz, 2018; Alonso et al., 2007a, 2007b, 2007c; Augustine, 2001; Barber et al., 2010; Bruwer, 2002a; Carmichael, 2005; Dowling, 1998, 2001; Dowling & Carlsen, 1999; Foo, 1999; Getz & Carlsen, 2008; McCutcheon et al., 2009; O'Neill & Charters, 2000; Treloar, 2002a,

2002b; Ye, Zhang & Yuan, 2017). This exploration into generational differences that occur in wine-related travel has seen vineyards expand from their traditional market of older wine consumers towards attempting appealing to Generation X, Y and the burgeoning millennial market (Bruwer, 2002a, 2002b; Carlsen et al., 2006; Flores & Medeiros, 2016; Garibaldi et al., 2017; Getz & Carlsen, 2008; Hussain, Simeon & Sayeed, 2016; Szolonki, 2018; Treloar et al., 2004).

Categorisation based on lifestyle topologies has become intertwined with research into the consumer behaviour of wine tourists (Corigliano, 1996; Hall, 1996; Nella & Christou, 2014b). Hall's (1996) typology based around the three categories of "Wine Lover", "Wine Interested" and "Wine Curious" set the foundation upon which stimulated interest within this area of research. Corigliano (1996) devised a typology influenced by the work of Hall (1996) which suggested that there were four categories which could be utilised to describe wine tourists. The first of these categories was "The Professional" who is both knowledgeable and open to sampling new wine products; second was "The Impassioned Neophyte" who values not only the wine and the food, but also places value on the scenic and social elements of the wine tourism experience (Corigliano, 1996). The third category, classified as "The Hanger-On", exhibited a low level of wine knowledge, yet was eager to further this through education at the cellar door. The final category – that of the "The Drinker"- was noted as someone who valued exclusive brands and often travelled to wineries as part of a larger group (Corigliano, 1996). Hall's (1996) tripartite typology has been influential on the work of both Houghton (2008) and Charters and Ali-Knight (2002) who researched consumer behaviour based around the level of interest in wine. Charters & Ali-Knight (2002) discovered a further segment of highly knowledgeable wine drinkers through their research who they labelled as the "Connoisseur."

The significance of the level of knowledge possessed by wine tourists has been one of the key streams of demographic research undertaken in this area (Charters & Ali-Knight, 2002;

Department of Tourism Industry Resources, 2005; Howley & van Westering, 2000; Macionis, 1997; Maddern & Golledge 1996; Morris & King, 1997b; Scudamore-Smith & Rutledge, 2001; Sheridan et al., 2009). Charters and Ali-Knight (2002) attempted to challenge the idea that wine knowledge may not correlate with an individual's interest in wine; Mitchell and Hall (2006) rejected this notion by pointing out the existence of a "Connoisseur" segment put forward by Charters and Ali-Knight (2002) contradicts this statement and provides evidence that there is indeed a relationship between wine knowledge and the level of interest in wine tourism activities.

Surveying lifestyle characteristics has proven to be an area where a number of typologies have been embraced. One such example was the 2001 Travel Activities and Motivation Survey conducted by the Economic Planning Group [EPGC]. Canadian and American travellers provided the focus for the typology that underpinned this study (EPGC, 2001). Centering on the level of interest in wine products that wine tourists possessed, this study viewed wine tourists who had high levels of interest as being part of a segment labelled as "Personal Indulgence" (EPGC, 2001). Those who were curious about wine were labelled under the banner of "Exploration", while the final segment in this typology consisted of visitors who were motivated by "Romance and Relaxation" (EPGC, 2001). Other studies have looked at the traditional levels of consumer behaviour in terms of high, medium and low involvement (Cohen & Ben-Nun, 2009; Lockshin & Spawton, 2001; Nella & Christou, 2014b). The levels of wine tourist involvement (low, medium – high and high) of Greek and English wine tourists was examined by Nella and Christou (2014b) which also investigated the attitudes of winery visitors pre- and post-visit. This study noted the importance of looking at visitation patterns and whether visitors were part of a larger group or not and found that this influenced their motivation for visiting alongside their overall dollar amount spent per individual visitor (Nella & Christou, 2014b).

Visitors' perception of their social status was found to play a role based on lifestyle characteristics and similar values (Cambourne & Macionis, 2000). This typology developed by Cambourne & Macionis (2000) utilised a series of "Value Segments" which involved wealthy "Visible Achievers" along with the well-educated "Socially Aware". Findings from this study indicated that members of these wealthy and well-educated segments were more likely to be actively engaged due to their social status in seeking new and indulgent experiences (Cambourne & Macionis, 2000). Other studies based on typologies include that of Brown et al. (2007) who in a study of the Canadian wine tourism market used ego involvement with wine as a segmentation basis, and identified four segments: "Hedonic Aficionados", "Cautious Enthusiasts", "Fastidious Epicureans", and "Functional Differentiators". Szolnoki (2018) studied German wine tourists applying the typology of nationality, visiting frequency and amount of wine purchased within a region. Findings from this study suggested that incentivisation of first-time wine tourists alongside customer loyalty programs was worthy of consideration in order to attract more business to the cellar door (Szolnoki, 2018).

Carlsen (2004) argued that discussion around wine tourist lifestyle typologies was missing the important fact that complementary attractions close to winery locations also play a fundamental role in assisting consumer awareness. Regionally based strategies designed to maximise visitor numbers were cited by Carlsen (2004) as needing to be planned out to ensure engagement on multiple levels with potential wine tourists. Education which focuses on the region and wines produced (Barber et al., 2008), knowledge of demographics and visitor lifestyles characteristics (Charters & Ali-Knight, 2002; Cullen et al., 2006; Houghton, 2008; Mitchell & Hall, 2001b), or product testing at the cellar door (Chen, Bruwer, Cohen & Goodman, 2016; Dodd, 1999, 2000; Fernandes & Cruz, 2016; Hall et al., 2000) can all be employed as strategies to attract greater visitor numbers. The economic impacts of additional revenue streams provided by wine tourism as a result of these increased visitor numbers has been the subject of a number of

studies (Australian Winemakers Federation, 1996; Byrd et al., 2016; Correia, Meneses & David, 2016; Macionis, 1998; Macionis & Cambourne, 2000; Milroy, 1997; Mitchell & Hall, 2006; Skinner, 2000; Taylor & Shanka, 2004; Storchmann, 2008; Tourism Victoria, 2003a; Winemakers Federation of Australia, 2002).

Wine Tourism Groups

Group behaviours exhibited by wine tourist has been the subject of several analyses (Getz, 2000; Griffith, 2007; Gu, Qiu Zhang, King & Huang, 2018; Hall et al., 2000; Roberts & Hall, 2001; Sparks, 2007). The effects of these behaviours have not always been found to be positive however. In a study of the Walla Walla Valley wine region in the United States, Griffith (2007) stated that negative effects were possible; these included a shift in culture (Getz, 2000; Griffith, 2007) coupled with local residents feeling socially excluded due to the degree of affluence shown by winery visitors (Griffith, 2007; Hall et al., 2000; Roberts & Hall, 2001). The difficulty in obtaining accurate statistics in terms of visitor groups numbers is noted by Mitchell and Hall (2006, p. 317) who contend that “the vast majority of visitor numbers come from New World wine countries...however, estimates of visitor numbers are much less readily available for Old World wine regions”. Studies of smaller regional wineries in Burgundy, France by Frochot (2000, 2001) reported that a third of Burgundy winemakers received less than 1000 visitors per year; operations that were of large scale could attract upwards of 130,000 visitors a year (Frochot, 2000, as cited in Mitchell & Hall, 2006). Cambourne et al. (2000) cite the national differences in visitation by citing Italian figures that report that over 2.5 million people visit Italian wineries annually. Given that visitor estimations at a winery, regional and national level vary dramatically Mitchell and Hall (2006) have noted the need for a consistent and more accurate approach for recording visitation statistics. This represents an important area for further research into how the precise quantification of visitor numbers can be captured (Golledge & Maddern, 1994; Mitchell & Hall, 2006; Terziyska, 2017).

Reasons for visitation

Measurement of the motivations that drive winery visitation has suffered from inconsistent procedures in terms of the measures utilised which has made “direct comparisons between studies difficult and generalisations almost impossible” Mitchell and Hall (2006, p. 321). Past research has applied measures which include the total number of visits to wineries within a particular wine region (Byrd et al, 2016; Dodd, 1995; Dodd & Bigotte, 1995, 1997); the number of visits to wineries within the same state (Hussain et al., 2016; Patterson, 2000); the total number of visits to a particular wine region (Morris & King, 1997b; Molina et al., 2016; Szolnoki, 2018) and the number of winery visits over a twelve month period (Dodd, 1995; Dodd & Bigotte, 1995, 1997; Patterson, 2000). Other areas examined include the length of time between winery visits (Cullen et al., 2006; Maddern & Golledge, 1996; Szolnoki, 2018) and whether visitors are experiencing their first time at a particular winery (Bruwer & Rueger-Muck, 2018; Hashimoto & Telfer, 2003). Seasonal patterns of wine tourist visitation were researched by Maddern and Golledge (1996) and their data revealed that no discernible patterns were able to be found.

One significant factor which motivates wine tourism is the desire for escapism (Getz, 2000; Hall & Johnson, 1997). Rural settings which offer tranquillity form a large part of a positive wine tourism experience (Hall & Johnson, 1997); this assertion is supported by the fact that the surrounding landscape and picturesque views are important in providing an authentic rural experience (Getz, 2000; Marzo-Navarro & Pedraja-Iglesias, 2009; Page & Getz, 1997). Educational opportunities offered such as classes on winemaking, wine tasting and being able to converse directly with wine makers about the processes behind wine production were also an important reason for visitation (Byrd et al., 2016; Jones et al., 2015; Ravenscroft & Van Westering, 2001; Santos, Ramos & Almeida, 2017). Cohen and Ben-Nun’s (2009) research into wine tourism in Israel also supported these findings by emphasising that the willingness

of tourists to experience not just the wine but also the features of a region were key motivating factors for visitation.

Visitor attributes

Determining if a defined set of attributes exists which are commonly shared by the typical wine tourist has been a topic of debate amongst many researchers (Atkin et al. 2007; Alonso et al., 2006; Bruwer & Alant, 2009; Dodd & Bigotte 1995, 1997; Jayawardena, 2008; Lockshin & Spawton, 2001; Morris & King, 1997b; O'Neill & Charters, 2000; Quadri-Felitti & Fiore, 2012; Scherrer et al., 2009). Viewing wine tourism and sustainability from the supply-side perspective has revealed that several reasons exist as to why visitors engage in wine tourism (Macionis, 1997). This has made creating a defined set of attributes challenging. The impact of having family, friends and partners alongside whilst visiting a winery and their influence on purchase behaviours at the cellar door has been noted (Jago & Issaverdis, 2001; Jayawardena et al., 2008; Maddern & Golledge, 1996; Nowak et al., 2006; Patterson, 2000; Pikkemaat, 2009; Rutzou, 1997). The time spent onsite relative to the purchase behaviour exhibited by tourists was studied by Dodd (1995). However, due to inconsistent approaches used when measuring wine tourist behaviour such studies have been hard to implement (Mitchell & Hall, 2006).

Sensation seeking behaviours of wine tourists formed the basis of a study by Galloway (2008) who found that more adventurous sensation seekers were attracted to travelling to wineries which were located in remote locations. This finding is important when considering the marketing and positioning of wine trails; combining this with other activities in a region which appeal to these higher sensation seekers and “their interest in self-indulgence” (Galloway et al. 2008, p. 963) could serve to produce more engaging adventure tourism packages. Leisure activities available also were found by Marzo-Navarro and Pedraja-Iglesias (2009, 2010) to be an important motivating factor for Spanish wine tourism. These activities, alongside the ability

to directly interact with the winemaker at the cellar door, served to have a positive effect on the purchase intentions of wine tourists (Marzo-Navarro & Pedraja-Iglesias 2009, 2010).

Smaller wineries have benefited from the sale of souvenirs which aid in “promoting a sense of memory of the trip” (Barber et al., 2008, p. 47). The purchase of souvenirs not only serve as a reminder of a wine tourism experience but have also gained prominence as a tool to reinforce brand association (Dodd, 1995; Dodd & Bigotte 1997; Hashimoto & Telfer, 2007; Hall & Mitchell, 2008; Richards, 1996; Roberts & Sparks, 2006; Stone, Migacz & Wolf, 2018). The lucrative nature of this revenue stream was the focus of research by Dodd and Bigotte (1997) who discovered that the purchase of souvenirs and non-wine related products represented over 20 per cent of the overall tourist spend at wineries. Further research of Australian wineries by Sparks (2008, p. 1188) stated that “three unique dimensions of wine tourism were found to exist, namely destination experience, core wine experience and personal development.” On this note Donaldson (2004) also found that Australian domestic winery visitors spent longer at one destination than those tourists who did not engage in wine tourism activities, with over five nights spent on average in one location; the same group of travellers were also found to contribute more than 76 per cent to the local economy than other domestic travellers through dining out and sightseeing activities (Donaldson, 2004, cited in Mitchell & Hall 2006).

Wine distribution channels have also benefited from post visit consumer behaviour with increased emphasis placed on the brand imaging of wine products (Charters & Al-Knight, 2000; Hall et al., 2000; King, 2000; Mitchell et al., 2000; Mitchell & Hall, 2006; Morris & King, 1997a; O’Neill & Charters, 2000; Sambridge-Mitchell, 1999; Shane, Murad & Freeman, 2018; Singh & Hsiung, 2016). However, Mitchell and Hall (2006) have pointed out that the area of post-visit behaviour is one that is currently under researched. Some studies have attempted to try to address this imbalance; King and Morris (1997a) tracked basic purchase behaviour post-visit of wine tourists in the Augusta/Margaret River region of Western

Australia, while Houghton (2001, 2002, 2008) has focussed on repeat attendance at wine festivals and the subsequent purchase behaviour of festival attendees. Houghton (2001, 2002, 2008) found that a positive increase in the amount of wine purchased by festival attendees post-visit had occurred when compared with participants' purchase behaviour prior to attending a festival, thereby highlighting the importance of festivals as a wine tourism marketing tool.

2.6 Environmental Issues

Environmental issues such as biosecurity and sustainability are two topics which are of increasing significance for wine tourism research (Hall 2003, 2005, 2006; Mitchell & Hall, 2006; Hall et al., 2000; Hall & Mitchell 2008), and this section will examine why these issues have come to such prominence.

Sustainability issues within the international wine industry

Although Ohmart (2008) writes of a synchronicity that can be achieved when the goals of sustainable winemaking practices are in tandem with both the local community and the natural environment, the development of sustainable winegrowing presents a number of challenges to wine production and marketing practices (Alonso & Liu, 2012; Flores, 2018; Forbes et al., 2009; Hall & Mitchell, 2008; Herath, 2013; Jones, Singh & Hsiung, 2013; Klohr, Fleuchaus & Theuvsen, 2013; Montella, 2017; Pomarici, Vecchio & Verneau, 2014). Not only have there been changes made to production methods, but also the move towards sustainable practices within the wine industry has created several significant issues: first, the adoption, implementation and governance of these practices; second, how these sustainable practices are promoted in terms of brand positioning and competitive advantage; and, finally, whether sustainable winegrowing represents a pathway towards long term economic viability for wineries.

Sustainability from stakeholder perspectives

The recognition of the importance of sustainability issues occurs at multiple levels both internal and external to the winery concerned (Alonso & Liu, 2012; Marshall, Akoorie, Hamann & Sinha, 2010). Many stakeholders perceive sustainability as an important source of competitive advantage which can transfer into a positive, environmentally conscious image in the mind of the consumer resulting in increased sales and brand loyalty (Nowak & Washburn, 2002). However, wine producers face an extremely competitive business environment given a decline in per capita wine consumption, the increased internationalisation of wine sales, and changes in consumer taste (Hall & Mitchell, 2008). The knowledge which stakeholders possess regarding environmental issues is also an important factor associated with their involvement concerning environmental issues, and this can be carried forward into the subsequent purchase behaviours and brand loyalty towards particular wineries (Nowak & Washburn, 2002).

The adoption of sustainable practices as a point of differentiation has been noted as a growing trend among wineries (Annunziata, Pucci, Frey & Zanni, 2018; Atkin & Gilinsky Jr., 2015; Carmichael & Senese, 2012; Flint & Golicic, 2009; Golicic, Flint & Signori, 2017; Grimstad, 2011; Montella, 2017). The way in which the end product reaches consumers has become important when considering environmental issues such as carbon emissions and food/wine miles undertaken in the journey from the vineyard to final consumption (Nowak & Washburn, 2002). A study of how sustainable production methods could be used by Californian wineries to differentiate their products found that “customers like the concept of sustainable winemaking...but they really do not have a clear idea what sustainability means in practice or what process the wineries do to achieve it” (Zucca, Smith & Mitry, 2009, p. 193). Attracting wine tourism (winery visitation) via the promotion of sustainable methods of onsite viticultural

production is another path which is being used pursue competitive advantage and build brand equity (Nowak & Washburn, 2002). However, this approach, although undertaken in the interests of protecting the immediate environment, does not always marry with the political and ecological realities of sustainability at a global scale (Hall, 2010). Therefore, to be truly sustainable, wine growing needs to understand its environmental, social and economic effects in the supply chain and distribution channels (Barber, Taylor & Strick, 2009). As a result, Barber et al. (2009, p. 167) suggests that “in order to increase purchase intention of an environmentally responsible product, such as visitation to ecological wine regions, consumer promotion should address both environmental and individual product consequences”.

Economies of scale are critical to the implementation of sustainable practices. In a study of sustainable viticulture practices in California it appeared that larger wineries had the resources and financial means to pursue their locally based sustainability program while smaller vineyards that were less financially empowered had a slower rate of adoption (Zucca et al., 2009). Shaw, Lubell and Ohmart (2011, p. 1091) put forward the idea that the three social processes of “innovation, cultural change and co-operation” are critical to the adoption of sustainable practices based on their research in the Lodi wine region of California. Carmichael and Senese (2012) further developed this idea in their study of two contrasting Canadian wine regions (the Niagara Peninsula of Ontario and the Okanagan Valley of British Columbia) suggesting the adoption of sustainable practices is also dictated by the business development stage of a winery. This scenario suggests a delicate balancing act; a balance that creates synergy between the supply and demand forces at work in order to maintain both a competitive and viable market position whilst addressing political, economic and ecological concerns (Carmichael & Senese. 2012; Hall, 2010; Shaw, Lubell & Ohmart, 2011).

In contrast, a lack of institutional support has hampered the adoption of sustainable practices by some Australian wineries (Alonso, 2010). Alonso (2010, p. 168) states that “in times of increasing environmental challenges and international competition support from organisations that include government, local agencies and industry associations is often needed to assist small winery operations and the wine industry in general in their quest for long-term environmental sustainability, while maintaining product quality.” Environmental protection and conservation practices are potentially an area of some contention within the industry; achieving a balance between national goals, firm goals, environmental initiatives and conservation approaches can be difficult to maintain. An example of this within wine tourism can be seen with respect to industry attitudes towards managing biological invasions and disease (Wynberg, 2002). Attempts to prevent the transmission of vector-borne diseases, which arguably present one of the highest level of threats to wine tourism (Hall, 2003, 2005), have been hampered by governmental and global management failures (Harrus & Baneth, 2005). This suggests that greater collaboration between government agencies and research institutions could serve to provide a more co-ordinated approach towards environmental protection (Harrus & Baneth, 2005).

Biosecurity

Hall (2003, 2005) has noted that there is a lack of awareness amongst inbound wine tourists in terms of the biosecurity risks. However, an awareness of these same risks has been recognised as being important by stakeholders within the wine industry, for example in the Okanagan Valley of British Columbia (Wilkins & Hall, 2001). While the wine tourism dimension is obviously very important, there are also biosecurity risks for winegrower’s vineyards even if they do not take visitors; therefore, the costs of any strategy and how they may be implemented are an important consideration.

In terms of risk mitigation, it has become of paramount importance to question whether vineyards have effective strategies in place to deal with potential biosecurity threats. Recognition of the importance of strict biosecurity protocols and the importance of a high degree of information sharing regarding potential biosecurity risks was noted in a study of wine tourism in Oliver, British Columbia by Poitras and Getz (2006). This study found that because community stakeholders viewed wine tourism as an important source of economic prosperity, protection from biosecurity risks that could be introduced by visitor traffic was therefore paramount from the stakeholder perspective (Poitras & Getz, 2006). However, biosecurity is arguably more of an emerging area in wine sustainability. Other environmental issues such as climate change, the use and quality of water, organic and inorganic solid wastes, greenhouse gas emissions, and energy use tend to be given a higher priority in sustainable winegrowing, while the use of chemical products, land use and broader ecosystem impact are other significant elements of concern (Barber et al., 2009; Christ & Burritt, 2013; Forbes et al., 2009; Gabzdylova, Raffensperger & Castka, 2009; Knowles & Hill, 2001; Pullman, Maloni & Dillard, 2010). Each of these issues will now be investigated.

Climate change

Webb, Whetton and Barlow (2008, p. 99) write of the “intrinsic link” which exists between the climate in which wine grapes are grown and the quality of the wine which is produced. This idea underscores the fragile nature of the wine industry in the face of the impact of global climate change. Winegrowing, like tourism, is an industry especially vulnerable to the effects of climate change, and “the wine industry is expected to be especially vulnerable to these impacts” (Christ and Burritt, 2013, p.5). Analysing what these impacts mean for wine producers in both Australia and New Zealand provides one of the key foci of this thesis. Gaining a wider understanding of exactly what the key issues are regarding the response of

winegrowers towards climate change and sustainable wine production firstly involves looking at what the potential impacts of climate change could be on wine quality, and then secondly at what Winn et al. (2011) refer to as the two approaches towards climate change – mitigative approaches and adaptive approaches.

The potential impacts of climate change on winegrowing have resulted in a range of work that examines both the effects of climate change as well as the business response (Ashenfelter & Storchmann, 2016; Galbreath, 2011; Jones & Goodrich, 2008; Jones et al., 2005; Mozell & Thach, 2014; Ollat, Van Leeuwen, de Cortazar-Atauri & Touzard, 2017; Webb et al, 2008).

Traditionally, the warmest years have tended to produce the best wines in many regions (Drappier, Thibon, Rabot & Geny-Dennis, 2017).

When considered in the context of warnings of increases in the length of seasonal growth times, coupled with the advent of a greater number of extreme weather events, it would appear that the consequences of climate change could have repercussions throughout the global wine industry for many decades to come. Keller (2010, p. 64) notes this in the following statement:

Because grape cultivars differ in their suitability for and adaptability to different climates, shifts in the cultivar profile of different regions, and possibly the emergence of hitherto unsuitable lesser-known or even novel cultivars, can be expected over the coming decades. A shift of grape production to cooler regions of the world, i.e. towards higher latitudes and altitudes is [a] likely scenario of global warming.

Nevertheless, the impacts of climate change are highly variable both geographically and in terms of its effects on grape varieties (Galbreath, 2011, 2014, 2016; Jones et al., 2005; Mosedale et al., 2016; Schultz, 2016). Temperature changes in southern European regions have

resulted in some areas becoming too hot to produce wines deemed to be of high quality, which have seen winegrowers move their operations to northern regions as a result (Jones et al., 2005). Similarly, research conducted in the Napa Valley region of California (Nemani et al., 2001) has indicated that the quality of grapes harvested was influenced by fewer frosts in the winter and the early onset of spring. The optimal conditions required for growing particular varieties are constrained to geographical locations (Fraga et al., 2016; Galbreath et al., 2016). Climate change therefore creates a situation that puts “the grapevines at a greater potential risk from climatic variations and change than crops with a broader geographic range” (Jones et al., 2005, p. 322). One means of mitigating the economic risks of less than optimal growing conditions in the Niagara region of Canada has been to use weather contracts (Cyr, Kusy & Shaw, 2010).

Strategies designed to address problems caused by climate change are regarded as critical within sustainable winegrowing to protect “the vitality of the industry” (Nicholas & Durham, 2012, p. 484) as well as respond to wider pressures (Battaglini et al., 2009; Diffenbaugh et al., 2011; Jones et al., 2005; Nicholas & Durham, 2012). However, the capacity for a winegrowing or tourism system to be able to adapt to change is subject to the ability of actors to work collaboratively, as well as structural changes at the social and institutional level (Hall, Prayag & Amore, 2018; Pickering et al., 2015).

Potential impacts on wine quality

The potential impacts of climate change on wine quality are represented by what Holland and Smit (2010) refer to as two dominant streams of literature within this particular domain. The first stream of research concerns regional warming trends on wine quality (Anderson et al., 2008; Jones et al., 2005; Jones & Storchmann, 2001; Lobell et al., 2006; Nemani et al., 2001; Ollat, Touzard & van Leeuwen, 2016; van Leeuwen & Darriet, 2016; Webb et al. 2008), whilst

the second stream focuses on the variability inherent in climate change and its relationship with the overall quality of wine that is produced (Esteves & Manso Orgaz, 2001; Galbreath, 2016; Jones & Goodrich, 2008; Quiroga & Igelsias, 2009; Rodó & Comín, 2000; Schultz, 2016). Both of these streams will now be examined in turn.

Regional warming trends on wine quality

Jones and Davis (2000) contend that traditionally the warmest years have tended to produce the best wines in many regions. Keller (2010, p.60) points out that this idealistic scenario is actually under threat and may actually disappear altogether as “projected increases in average temperature and climate variability over the coming decades may threaten some regions’ competitive advantage.” An example of this is illustrated by Nicholas and Durham (2012) who found that regional warming in Northern California coupled with stress from frost, pests and disease had led to the need to introduce adaptive measures such as ensuring that exposed fruit was provided with shade, delays were made to the start of normal pruning regimes and maintaining the use of spray to protect grapes from UV rays.

Relationship between climate variability and wine quality

When considered in the context of the IPCC (2007) warning of increases in the length of seasonal growth times, coupled with the advent of a greater number of extreme weather events, it would appear that the consequences of such occurrences could have repercussions throughout the global wine industry for many decades to come. Jones et al. (2005, p. 321) contends that climate change can be found to be “highly variable” both geographically and in terms of the type of varietal that is being produced. Temperature changes in southern European regions have resulted in some areas becoming too hot to produce wines deemed to be of high quality, which have seen winegrowers move their operations to northern regions as a result of this (Fleming, Park & Marshall, 2015; Jones et al. 2005; Kenny & Harrison, 1992; Mozell & Thach,

2014). Similarly, research conducted in the Napa Valley region of California by Nemani et al. (2001) indicated that the quality of grapes harvested was influenced by fewer frosts in the winter and the early onset of spring. Increases in carbon emissions have also been blamed for changes in grape quality (Galbreath, 2014; Galbreath, Charles & Oczkowski, 2016; Jones et al., 2005; Schultz, 2000; Tate, 2001). In order to deal with the situations presented by this variability, winegrowers can choose two pathways; whether they chose to mitigate the risks that they face, or whether they chose to adopt strategies that are designed to adapt to the variety of climate-based challenges that their businesses are now facing.

Adaptation and mitigation strategies

Adaptation within the context of climate change is defined by the IPCC (2007, n.p.) as the “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.” Strategies designed to address problems caused by climate change are critical within sustainable wine production not only in order to protect what Nicholas and Durham (2012, p. 484) term as “the vitality of the industry” but also due to the widespread effects caused by the global economic downturn on wine producers coupled with the increased pressures that they now face as a result of this situation (Ashenfelter & Storchmann, 2016; Battaglini et al., 2008; Belliveau et al., 2006; Diffenbaugh et al., 2011; Jones, 2004; Lundquist, 2007; Nicolas & Durham, 2012; Smith, 2007). The capacity for a system to be able to adapt to either planned or spontaneous change is subject to not only the ability of individuals to work together collaboratively, but also the structural changes which can occur at both a social and institutional level as well (Armitage & Plummer, 2010; Matthews & Sydneysmith, 2012).

Linnenlucke, Griffiths and Winn (2013, p. 415) suggest that adaptation studies which take a strategic approach designed to “(re)formulate adaptation as an issue of enhancing social and economic resilience to a variety of climate change impacts” are critical to extending the amount

of adaptation strategies currently available at the firm-based level. Not only could such a reformulation be beneficial from both a social and economic perspective, but this approach could also serve to “integrate both adaptation as well as mitigation efforts to respond to and prepare for the physical impacts of climate change as well as changing the international, national, and regional carbon governance regimes” (Linnenlücke, Griffiths & Winn 2013, p. 415). Pinkse and Kolk (2012, p. 200) contend that such arrangements indicate that the “complexities and trade-offs in creating linkages between climate change and sustainable development as well as mitigation and adaptation are more apparent than the potential synergies” and that the integration of such efforts are still very much in a formative phase.

Jones et al. (2005, p. 322) write that as the optimal conditions required for growing particular varieties are constrained to geographical locations that climate change can create a situation that puts “the grapevines at a greater potential risk from climatic variations and change than crops with a broader geographic range.” Pickering et al. (2012) suggest that the integrated responses to climate change mark a possible way forward in their study of the wine industry in Ontario, Canada. Arguing from the perspective that utilising “transdisciplinary approaches affords the opportunity for more inventive, deeper, and meaningful responses to climate change than what might be achieved through single or even multi-disciplinary approaches” (Pickering et al. 2012, p. 6), this particular study noted that addressing climate change through the use of collective collaboration to seek innovative solutions actually resulted in a significant level of interest from key winery stakeholders in terms of their support of these new initiatives (Pickering et al., 2012).

Impact of wine production on ecosystems

The Convention on Biological Diversity (2013, n.p.) defines an ecosystem as “a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.” The impact of wine production on ecosystems is an area which represents an emergent stream of literature; Forbes et al. (2012) have examined impacts in the context of the Greening Waipara initiative in New Zealand, while similar research in South Africa has also noted the detrimental impacts that wine production can have on the local ecology (Jones et al., 2005; Vink et al., 2012). Conflicts of interest based on the level of knowledge and experience that winegrowers currently possess based on climate change and the effects on the quality of the being winegrapes produced can impede the implementation of adaptive practices within ecosystems (Mosedale et al., 2016). These conflicts concerning a variety of ecosystem and environmental related topics which will now be examined.

Water related issues

The use and quality of water is a significant factor in the wine production process (Gabzdylova, et al, 2009). Given the variability in geography, size, location and production techniques applied during this process, it is usually the responsibility of each producer to ensure the use of most effective and efficient sustainable methods available are applied in terms of water use (Christ & Burritt, 2013; Ene, Teodosia, Robu & Volf, 2013). This situation represented a less than ideal scenario in a study of South African vineyard managers; with water usage by managers under-reported by 60% on average (Sheridan, Bauer, Burton & Lorenzen, 2005). Australian vineyard managers have also been found to be under-reporting water usage to the point where 5% of cases studied were found to be using double the reported best practice level of 0.4 L per bottle (Kumar, Frost, Correll, & Oemcke, 2009). The lack of any formal benchmark

based on the amount of wine produced versus the number of litres water needed to meet what could be then labelled as a truly sustainable wine production process is a key issue in sustainable vineyard water usage (Chaves et al., 2007; Christ & Burritt, 2013; Herath, et al., 2013; Keller, 2010; Kumar et al., 2009). The variety of geographical terrains that wine regions encompass dictates that the methods used, and the resultant efficiency of these methods, cannot be used as a basis for industry level benchmarks in terms of sustainable production (Chaves et al., 2007; Christ & Burritt, 2013; Herath et al., 2013; Keller, 2010). In addition, the disposal of wastewater from winemaking and cellaring is one of the most pertinent environmental issues facing wineries who are attempting to adopt sustainable practices (Knowles & Hill, 2001).

Solid waste

Solid waste generation is a major issue facing sustainable wine production (Alonso, 2010; Barber, Taylor & Strick, 2009; Hughey, Tait & O'Connell, 2005; Tee, Boland & Medhurst, 2007; Walsdorff, Van Kraayenburg & Barnardt, 2005). Waste minimisation strategies have been a major focus of winegrowers' attempts to improve their environmental performance; However, the rudimentary way in which waste minimisation strategies have been implemented by many wineries has resulted in ineffective process for dealing with solid waste (Musee, Lorenzen & Aldrich, 2007).

Organic waste

Organic waste in the wine production process is noted by Christ and Burritt (2013, p. 4) as including "by-products such as grape marc, lees, pomace, stalk and dewatered sludge." These all require specific disposal treatments due to odour issues which can arise (Keenan, 2007; Ruggeri et al., 2009). Seasonal production variations also present a challenge to the management of wastewater quality with the harvest period of production producing increased levels of effluent (Bustmante et al., 2008; Gea et. al., 2005; Ruggeri et al., 2009). This challenge is underpinned by the fact that a gap exists within the current knowledge of winegrowers

regarding exactly which of their facilities produce organic waste (Christ & Burritt, 2013). This situation could be remedied by the collecting data which pinpoints the sites of inefficient effluent run-offs which could help to inform future strategies for waste reduction (Bustamante et al., 2008; Devesa-Rey et al., 2011; Musee et al., 2007).

Inorganic waste

Methods utilised by wine producers for inorganic waste disposal have been deemed to be even less effective than those used for organic waste (Christ & Burritt, 2013). Inorganic waste materials comprise “numerous kinds of waste plastic, especially pesticide containers, irrigation lines, old netting, vine guards, packaging waste and polythene” (Gabzdylova, et al, 2009, p. 994). The two most common types of disposal are incineration or depositing materials in landfill (Gabzdylova, et al, 2009; Knowles & Hill, 2001; Sogari et al., 2017) while recycling programmes have reportedly only met with a limited degree of success (Walsdorff et al., 2005). The economic benefits of these methods of disposal have proven to be a contentious topic (Christ & Burritt, 2013; Forbes & De Silva, 2012; Pullman, Maloni & Dillard, 2010; Sogari et al., 2010) and it has been argued that stricter industry governance is required in order to ensure all wineries follow appropriate waste disposal practices (Devesa-Rey et al., 2011).

Energy related issues

Environmental issues concerning sustainable winegrowing not only encompass an array of water and waste related issues, but also include a range of energy related issues as well. These issues include the use of energy, greenhouse gas emissions that might potentially be caused by energy usage, and issues concerning the use of chemicals and the land itself. These areas can also have an impact on the delicate balance of the eco-systems that are present, and the following section will examine the challenges that each of these issues present for winegrowers.

Greenhouse gas emissions and energy use

Studies which have examined the logistics involved in both wine production and distribution have pointed out the intensive carbon footprint that these areas leave in terms of energy use (Barber, Taylor & Deale, 2010). This presents issues not only for winegrowers, but also for the entire supply chain. Over half of the carbon emissions involved in wine production occur in the post-production phase (Colman & Paster, 2009), presenting substantial challenges in meeting the demands of the end consumer with regards to sustainability (Reich-Weise, Paster, Erickson & Dornfeld, 2010).

One industry response to the challenges posed by greenhouse gas emissions was the development in 2007 of a joint initiative known as the Wine Industry Greenhouse Gas Accounting Calculator (Forsyth, Oemcke & Michael, 2008). This initiative was put together by industry associations from around the world in order to forge “a greater understanding of the carbon intensity of their own operations” (Christ & Burritt, 2013, p. 5). This need for a higher level of understanding is critical as increased temperatures as a result of climate change has been shown to have the capacity to damage vines in a number of wine regions (Christ & Burritt, 2013; Jones et al., 2005; Webb, Whetton & Barlow, 2008).

Chemical use

The use of chemical products in wine production has potentially become more prevalent as wineries attempt to pursue competitive advantage (Ruggieri et al., 2009). Chemical use is not solely related to just agricultural processes, but also occurs during the cleaning and maintenance processes involving the equipment used in wine production (Gabzdylova et al., 2009). Issues have arisen in terms of the use of chemically treated timber in vineyards, while

the use of herbicides, pesticides and synthetic fertilisers have also provided cause for concern (Forbes et al., 2009; Marshall et al., 2010). This is due to the fact that not only do these products present the risk of contamination to soil, but they can also potentially jeopardise water sources as well (Gabzdylova et al., 2009; Hughey et al., 2005; Santiago-Brown, Metcalfe, Jerram & Collins, 2015).

The “inappropriate use of chemical products can devastate the vineyards’ natural defence network by damaging populations of natural predators that would usually keep the original pest at bay” (Christ & Burrirt, 2013, p. 5). The lack of natural predators that this causes can lead to the application of stronger chemicals in order to boost vineyard defences which can then potentially create even more environmental problems. The economic implications of increased chemical use have also resulted in a significant effect on the overall cost per tonne of grapes utilised in production (Alonso, 2010; Forbes et al., 2009). Another concern is also the issue of the health of workers who have been exposed to chemicals used on the vineyard; an example of this from the French wine industry has been documented by Wasley and Chapparo (2015) where the use of crop spraying has been linked to cases of cancer amongst workers who use pesticides at non-organic wineries. Convincing wine producers to adopt natural approaches towards pest resistance has proven to be difficult given that synthetic alternatives are more economical and less labour intensive in their application (Christ & Burrirt, 2013; Gabzdylova et al., 2009). The benefits derived from using natural approaches often only became apparent after the fact (Alonso, 2010); Christ and Burrirt (2013, p. 6) contend that “a significant challenge for future research will be quantifiably finding ways to articulate the economic and environmental benefit associated with natural approaches to viticulture and wine-related land management.” Indeed, biodiversity-oriented approaches to vineyard management practices are relatively uncommon (Forbes et al, 2009), sometimes resulting in unintended effects on local ecologies (Jones et al., 2005; Vink et al., 2012).

Land Use

Issues in terms of land management have come to the fore in recent years due to the rapid expansion of winegrowing regions; this is a fact which holds particularly true for wine regions in New Zealand, Australia and Canada (Hughey et al., 2005; Marshall et al., 2010; Pullman et al., 2010). The main problems surrounding land use concern the contamination, pollution, and perceived changes to existing environments (Barber et al., 2009; Marshall et al., 2010; Pullman et al., 2010; Tee et al., 2007). On this note Christ and Burritt (2013, p. 5) state that “it is important wine organisations be able to tangibly demonstrate their commitment to environmental sustainability and preserving the local landscape” as these problems also have the potential to damage relations with local communities. This underlines the importance of not just considering sustainable land usage solely from the point of view of the individual wine producers, but also accounting for community interests as well (Alonso & Northcote, 2008; Barber et al., 2010; Marshall et al., 2010).

Migrant workers’ rights

The area of workers’ rights, and particularly that of migrant workers, is one that has risen to the forefront of debates concerning sustainable winegrowing in recent years (Lewis, 2017; Radio New Zealand, 2016). Concerns regarding the exploitation of migrant workers in terms of payment for hours worked alongside health and safety issues have seen labour inspections conducted within the New Zealand wine industry (Radio New Zealand, 2016). An example of this occurred during 2016 in the Marlborough wine growing region of New Zealand where Ministry of Business, Innovation and Employment [MBIE] representatives found that several wineries were in serious breach of New Zealand employment law due to their failure to meet minimum wage and recorded keeping requirements (Radio New Zealand, 2016). There have been concerns raised that the reputation of the New Zealand wine industry could be in jeopardy

with overseas customers refusing to purchase wine produced that does not meet ethical standards in terms of employment rights (Radio New Zealand, 2016).

Affirmative action to support migrant workers has been undertaken in the Napa Valley Wine Region in California with the provision of affordable housing for workers whether they are in the country legally or not (James, 2011). The bulk of the workforce at vineyards within the Napa Valley is made up of migrants, with an estimated 12,000 seasonal workers requiring support (James, 2011). Historically, within the California wine regions migrant workers had been victims of exploitation through poor working conditions and abuse (Dakin & Moyles, 2016; James, 2011), so although the provision of subsidies and support has begun in Napa Valley the uptake of such social justice initiatives within the international wine industry is still yet to gain traction.

Consumer Responses to Sustainable Winegrowing

Persuading growers to switch to sustainable winegrowing methods can require an assurance that there is something tangible to be gained in terms of the quality of wine, viability of the growing regime, and/or economic return. If this idea of tangibility is considered within the context of consumer perception towards sustainable winegrowing there is relatively little literature to provide wine producers with evidence of the economic value of sustainable practices with respect to increased returns. A study of how sustainable production methods could be used by Californian wineries to differentiate their products found that “customers like the concept of sustainable winemaking...but they really do not have a clear idea what sustainability means in practice or what process the wineries do to achieve it” (Zucca, Smith & Mitry, 2009, p. 193). Some authors have argued that strong environmental stewardship is necessary on the part of producers if the concept of sustainable wine production is going to be accepted and acted upon by wine consumers in their purchasing (Berghoef & Dodds, 2013).

Forbes et al. (2009, p. 15) argue that “competitive advantage can only be gained in the marketplace if companies tell their consumers’ about their environmental focus” and that greater emphasis should be placed on the labelling of wine products to reinforce the fact that sustainable wine production methods have been used to create the finished product. Nevertheless, the communication of the positive environmental attributes of sustainable wine products is an area where there appears to be a disconnect between the desire of firms to be seen to be taking a proactive approach towards sustainability and the need for the end consumer to be able to access the appropriate information regarding what defines quality eco-certification at the point of purchase (Delmas & Grant, 2014; Forbes et al., 2009).

The question of whether eco-labelled wine can achieve higher price premiums in the marketplace has been a subject of some contention (Barber et al., 2009; Barber et al, 2010; Delmas & Grant, 2014; Delmas & Lessem, 2017; Forbes et al., 2009; Schäufole & Hamm, 2017; Zucca et al., 2009). A study of American wine consumers by Barber et al. (2010, p. 439). found that there existed a willingness to pay more for environmentally friendly wine packaging and declared that this is a sign from wine purchasers that “our ecological problems are serious and that behaving in an ecologically favourable manner is important and not inconvenient.” However, when looking at this question from a supply side perspective a New Zealand wineries study by Gabzdylova et al. (2009) found that neither sustainable nor organic wines were able to obtain a price premium. The desire for a quality product coupled with the personal values of those directly involved in producing the wine were revealed to be the primary influences on improved environmental performance (Gabzdylova et al., 2009). Consideration of these issues led to Jones (2012, p. 52) to offer the following comment:

While sound sustainability developments have occurred within the wine industry, it is becoming more and more critical to begin orienting the industry's innovation, communication and experiences toward consumer definitions, not solely industry definitions, of sustainability to ensure these efforts are relevant and promote economic vitality.

This statement underlines an important area of concern for researchers on winegrower sustainability when contemplating whether or not firms actually value certification and view sustainability programmes aimed at achieving this as important or not. Clearly, if firms adopt a cursory approach to sustainability then the implementation of branding and labelling initiatives will suffer as a result, with potential flow-on effects for brand and product perception.

Eco-labelling

The communication of positive environmental attributes of sustainable wine products is an area where there appears to be a disconnect between the desire of the firm to be seen to be taking a proactive approach towards sustainability and the need for the end consumer to be able to access the appropriate information regarding what defines quality eco-certification at the point of purchase (Alivandi Farsi, 2012; Castka & Corbett, 2016; Delmas, 2010; Delmas & Grant, 2014; Forbes et al., 2012; Harbaugh et al., 2011; Pomarici, Amato & Vecchio, 2015). Harbaugh et al. (2011, p. 1) note that “despite attempts by governments, industry groups, and nongovernmental organisations (NGOs) to clarify label standards, confusion by consumers is widely blamed for undermining the credibility of eco-labels, thereby reducing the incentive for

firms to adopt them.” Both the goals and the importance of eco-labelling for cool climate wineries will be examined in this section.

The goals of eco-labelling for wineries

Delmas and Grant (2014, p. 4) describe green products as credence goods – goods where consumers “cannot ascertain their environmental qualities during purchase or use.” Potential consumers are also not present during the production of these goods and are therefore unable to directly observe the “environmental friendliness of production” (Delmas & Grant 2014, p. 4). Obviously, this leaves the aforementioned gap in the level of information that is available to consumers regarding the environmental attributes of a product. Eco-labels are designed with the primary objective of reducing these levels of “information asymmetry” (Delmas 2010, p. 3) that can occur between the producers and consumers of green products. The key to countering such asymmetry is through providing credible information which clearly delineates the superior nature of labelled products from that of other competing non-labelled items (Lopes et al., 2014). Delmas (2010, p. 2) states that “the goal of eco-labels is to elicit increased demand for products perceived as environmentally favourable,” and it is this goal which provides environmentally responsible consumers with the ability to make informed choices when purchasing based on product-related environmental information (Leire & Thidell, 2005).

It is important when considering the concept of eco-labelling to make the distinction that the dimensions of credibility and comprehension, which together form the basis of consumer awareness with regards to eco-labelling, are not enough in isolation; consumer acceptance and consumer behavioural change is also required if eco-labelling is to be effective (Pomarici, et al., 2015; Schäufele, 2014). In terms of consumer awareness, Delmas (2010, p. 3) notes that the failure to effectively communicate the environmental attributes on an eco-label “will not

diminish the information gap between seller and buyer,” an argument which the research of Leire and Thidell (2005) supports by showing how the presence of competing eco-labels can cause consumers to become confused in a purchasing situation. The accessibility of eco-label information is also paramount to consumers; Delmas (2010) warns that if accessing information is cost prohibitive, then this will have a direct effect on the purchase likelihood of green products.

The trustworthiness of assertions made by companies on product eco-labels is a critical factor in determining which green products consumers choose to purchase (Delmas, 2010). Loureiro (2003) demonstrated this in a study of Colorado wine consumers which showed that if the perceived quality of the growing region is disputed that eco-labelling was not an effective marketing strategy. Clearly, this shows that the credibility of eco-labelling assertions is of paramount importance to the consumers; although issues pertaining to the credibility of eco-labelling programmes do not merely end at this point. Wine producers have also been found by Berghoef and Dodds (2013) to have questioned the process involved in both the legitimisation and verification of eco-labelling programmes, and stated that producers would not “participate in a program that would be perceived as ‘greenwashing’” (Berghoef & Dodds, 2013, p. 269) by potential consumers.

Delmas (2010) suggests that there are two very different dimensions at work when considering the goal of credibility amongst producers as they attempt to match their eco-labelling assertions. The first dimension consists of those products which have eco-labels which are issued by a third-party independently of the companies concerned and are based on a “developed transparent environmental criteria” (Delmas 2010, p. 3), while the second dimension focuses on an area which features what both Grodsky (1993) and Grolleau et al. (2016) declare as those eco-labels which merely contain unsubstantiated claims that purport to be related to some form of environmental friendliness. This has led to the development of three

dimensions by Grolleau et al. (2016) which can be utilised to distinguish eco-labels. The first dimension is the way the standard underlying the eco-label is defined; the second is the way in which the claim is verified, while the third dimension is the way in which the eco-label is signalled to consumers (Grolleau et al., 2016) and designed to set a product apart from other competing market offerings.

Responsibility for the promotion of sustainable winegrowing practices

Decisions based around exactly who is responsible for the promotion of sustainable winegrowing practices is reliant clear lines of communication between wineries and industry bodies who are in the position of governance (Alonso & Liu, 2012; Marshall et al., 2010; Scott et al., 2005; Sautier, Legun, Rosin & Campbell, 2018). The need to communicate product knowledge based around product attributes has seen a rise in the level of private agrifood certification standard programs which encompass wine production (Busch, 2011; Hatakna & Busch, 2011; Henson, 2011; Henson & Humphrey, 2011; Thompson & Lockie, 2013). Barber et al. (2009) point out that the knowledge which stakeholders possess regarding environmental issues is directly related to their involvement regarding environmental issues, while Sautier et al. (2018, p.15) suggest that “environmental governance initiatives facilitate changes towards agroecological production when they are developed for an entire collective as a guiding vision as well as a marketing point of difference.” This underlines why defining who exactly is responsible for the promotion of such practices amongst wineries has become important in terms of translating these market trends into increased revenue and repeat purchase behaviour.

Communicating how the end product reaches wine consumers as a point of market differentiation has been the subject of debate amongst wine industry researchers (Atkin et al., 2011; Carmichael & Senese, 2012; Casini et al., 2010; Flint & Golicic, 2009; Grimstead, 2011; Sautier et. al, 2018). The rising importance of this issue has been underpinned by the

consideration of environmental issues such as carbon emissions and food miles undertaken in the journey from the vineyard to final consumption (Nowak & Washburn, 2002). Attracting wine tourism via the promotion of sustainable methods of onsite viticultural production is another path which is being used pursue competitive advantage and build brand equity (Avgeli, Soteriades, & Sakoualou, 2018; Nowak & Washburn, 2002; Villanueva & Moscovici, 2016). Henson and Humphrey (2010, p. 164) predict that “product differentiation standards will be an increasingly evident ‘battleground’ within value chains, with attempts to maintain or change established power relations fuelling efforts to gain influence over standard setting.” This pursuit of competitive advantage, although undertaken in the interests of protecting the immediate environment, does not always marry with the political and ecological realities of sustainability needing to be understood at a global scale (Hall, 2010b). Therefore, to be truly sustainable, wine growing needs to understand the environmental, social and economic effects on both its supply chain and distribution channels (Sautier et al., 2018). Both Frochot (2000) and Barber et al. (2010) emphasise the importance of these effects for wine tourism marketing. Barber et al. (2010, p. 167) states that those involved with the marketing of wineries should ensure that “in order to increase purchase intention of an environmentally responsible product, such as visitation to ecological wine regions, consumer promotion should address both environmental and individual product consequences.”

Consideration of how to market sustainable winegrowing practices also presents another dilemma for winegrowers in terms of who should be involved in the promotion of such campaigns at the levels of regional and national governance (Sautier et al., 2018). The effectiveness of sustainable eco-certification campaigns within the wine industry has been singled out by Lambin and Thorlakson (2018) as an area where more research needs to be undertaken. If actors within the private sector undertake promotional campaigns around eco-certification there are the risks that a non-standardised and ill-conceived sustainability

campaign which fails to communicate a unified brand message will be the end result (Barber et al, 2010). However, there is also the danger that if such campaigns were left to actors within the public sector then disagreements over what constitutes sustainable practices could occur (Sautier et al., 2018).

Economies of scale are critical to the implementation of sustainable practices. Zucca et al. (2009) contend in their study of sustainable viticulture practices in California that it appeared to be the larger wineries that had the resources and financial means to pursue their locally based sustainability program. Their study indicated that there appeared to be a slower rate of adoption by smaller vineyards that were less financially empowered (Zucca et al., 2009). Shaw et al. (2011, p. 1091) put forward the idea that the three social processes of “innovation, cultural change and co-operation” are critical to the adoption of sustainable practices based on their research in the Lodi wine region of California. Carmichael and Senese (2012) add to this idea in their study of two contrasting Canadian wine regions (the Niagara Peninsula of Ontario and the Okanagan Valley of British Columbia) that the adoption of sustainable practices is also dictated by the stage of business development of each individual winery. This scenario suggests what Wall (1997) described as a delicate balancing act; a balance that creates synergy between the supply and demand forces at work in order to maintain both a competitive and viable market position whilst addressing both political and ecological concerns (Carmichael & Senese, 2012; Hall, 2010b; Hatanaka & Busch, 2008; Skinner, 2000; Zucca et al., 2009).

In contrast to the debate surrounding economics of scale Alonso (2010, p.168) suggests that a lack of institutional support is in fact what is hampering the adoption of sustainable practices by some Australian wineries. Further research into Australian wineries by Thompson and Lockie (2013, p.5) that was based around sustainability certification and vineyard practices also found that “standards for chemical use were regarded as problematic due to inadequate

residue testing and inconsistent rules governing the use of particular chemicals within standards.” Wine is not just the only area where multiple rules and governance problems appear to occur when considering the differing standards that exist; Hatakana, Konefal and Constance (2012, p.3) argue that the global dimension of the entire food supply chain calls for the need of one governing set of standards which “enable the market to be regulated, albeit in a way that is flexible, business friendly, and supportive of entrepreneurship. Furthermore, because standards promulgated using governance mechanisms are not de facto tied to a specific nation-state, they often fit better with the globalising tendencies of the agrifood sector.”

2.7 Innovation

The capacity to adapt to change through the introduction of innovative techniques has been proven by Pickering et al. (2012) as providing a key aspect to the survival of wineries in the face of environmental challenges. Environmental innovation is a term defined by Arundel et al. (2006) as new or modified techniques, systems and products to designed to avoid or reduce environmental damage The adoption of such innovations can be due to a variety of reasons; the response to public pressure, the need to meet government regulations and qualify for subsidies or to take advantage of new business opportunities (Arundel et al., 2006) are common reasons why environmental innovation is has become increasingly important. The definition put forward by Arundel et al. (2006) has its basis in the OECD and Statistical Office of European Communities (2005) definition of innovation being “the development or introduction of any new or significantly improved activity” (OECD et al., 2005) undertaken by participants, and encompasses any products, processes and methods that may have been first developed by a particular organisation that have since been adopted by others (OECD et al., 2005).

Innovation is increasingly seen as an important element of wine production, particularly as the aforementioned environmental concerns such as the adaptation and mitigation of climate change present a new set of challenges for wine producers (Pickering et al., 2012). Pickersgill

& Edwards (2005, p.8) state that “Innovation is a complex, multiple dimensional process that involves scientific and technical expertise, technical and educational infrastructure, integrated product and supplier networks and effective management and marketing strategies and government support.” Treatment of this complexity needs to be addressed at all levels of governance (Curtain, 2004; Pickering et al., 2012) within the wine industry in order to ensure the successful implementation of innovative sustainable wine production processes and techniques.

The four main categories of innovation

Extant literature in the field of innovation has pointed towards four main categories that exist consisting of product and process innovations with the addition of organisational and marketing innovations (OECD et al., 2005). Product innovations include significantly improved goods and services and have been noted as also encompassing the activities that tourists may experience and participate in when visiting destinations (Contò, Fiore, Vrontis & Silvestri, 2015; Karagiannis & Metaxas, 2019; Sørensen 2001; Stamboulis & Skayannis 2003; Hall 2009). In the context of sustainable winemaking, this notion applies to two dimensions; first, wine tourists who are attracted to wineries because of the process and production methods used on site fit within their political ideology; second, the end consumer who purchases a particular brand of wine because it is manufactured using sustainable methods.

Process innovations are the new or improved methods of production or delivery within an organisation that aim to improve efficiency and flow (Hjalager, 2009; OECD et al., 2005). These are associated primarily with the implementations of new technology designed to achieve specific managerial objectives (Yuan et al., 2006; Ohmart, 2008b; Bessant et al., 2009; Giuliani et al., 2011; Hall & Baird, 2012; Doloreux et al., 2013). Organisational innovations are deemed as those which improve existing business practices, workplace organisation or relations external to the firm (OECD et al., 2005). Finally, marketing innovations are any new

or significantly improved marketing methods that may have been adopted by the organisation (OECD et al., 2005) in order to either increase market share or facilitate entry into new markets (Fiore, Silvestri, Contò & Pellegrini, 2017).

The relationship between wine production and innovation

Wine production and innovation is an area where many different streams of literature exist; early studies in this area include the work of Hoerner (1995) which examined the competitive advantage which could be gained through adopting innovative practices utilising market research within the wine industry. This study also focused on legal aspects such as patents and intellectual property from the supply-side perspective (Hoerner 1995). Examining how innovation serves to improve wine production techniques (Alonso & Bressan, 2013; Aylward, 2002; Doloreux et al., 2013; Gilinsky et al., 2008; Leenders & Chandra, 2013; Muscio, Nardone & Stasi, 2017; Pickering et al., 2012; Preston-Whyte, 2008; Ratten, 2018; Vrontis, Bresciani & Giacosa, 2016; Woodfield & Husted, 2017) has also led into research into the effect of innovation on wine exports (Aylward 2004a, 2004b, 2004c; Olavarria et al., 2009) and the levels of knowledge sharing which exist between wine producers (Alonso & Bressan, 2013; Aylward, 2005a; Bou et al., 2008; Chiffolleau, 2005; Doloreux et al., 2013; Doloreux et al., 2015; Pickering et al., 2012; Pickersgill & Edwards, 2009; Ratten, 2018; Woodfield & Husted, 2017). Studies have also been conducted which attempt to provide a benchmark for innovation (Getz & Brown 2006) and review how successful tourism developments have benefited from the implementation of organisational, production or process changes (Hjalager 2009).

Research into the effect of innovation on collaboration and co-operation within wine industry clusters and networks arguably represents the largest stream of writing within this domain (Alonso & Bressan, 2013; Aylward, 2005a, 2005b, 2006b, 2006c; Aylward & Turpin, 2003; Bou et al., 2008; Chiffolleau, 2005; Chiffolleau et al., 2006; Cusmano et al., 2008; Doloreux et

al., 2013; Fleet, 2008; Hira & Bwenge, 2011; Kuah, 2002; Pickering et al., 2012; Taplin & Breckenridge, 2008; Touzard, 2010). Examining how increases in levels of collaboration are affected by the support provided at the levels of regional and national governance is another stream of investigation (Aylward, 2006a; Doloreux et al., 2013; Doloreux et al., 2015; Guthey, 2008; Hira & Bwenge, 2011; Powrie & O'Connor, 2010; Simpson, 2005) while studies into how regulations can also serve to impede innovation have also been undertaken (Ewert & Henderson, 2004).

Knowledge sharing between networks and whether geographical proximity proved to be a prominent factor in this has been another prominent pathway of investigation (Aylward, 2000b; Aylward & Zanko, 2006; Gilinsky et al., 2008; Giuliani et al., 2011). A study by Doloreux et al. (2013) of the Canadian wine industry found that although individual wineries adopted differing approaches when innovating, consistency was represented within the limited number of ways in which this innovation was undertaken. Doloreux et al. (2013) pointed towards the marked distinction between the sources which existed at the various market, governmental and educational levels which encouraged innovation within the Canadian wine industry. However, the collective pursuit of innovation amongst wineries does not always go smoothly; the failure of product innovations was the subject of research by Marks and Mortensen (2003), and this study found that producers could easily lose confidence in their innovation processes when faced with failure. This admittance of failure has also been revealed to have a direct effect on the speed at which other wineries adopted subsequent innovations within a network (Kaine et al., 2007). The protection of business reputation and brand identity amongst network members is a critical aspect to consider in terms of risk aversion towards the introduction of new processes as no wine producers would want to be associated with an innovation that has failed to succeed (Pike & Melewar, 2006).

Measuring innovation within the wine industry

Hira and Bwenge (2011) touched on the adoption of innovative practices in the Canadian wine region of British Columbia with a set of informal questions which were not based on the OECD et al. (2005) framework. Winemakers who were surveyed in this study reported to Hira and Bwenge (2011, p.58) that:

Independent consultants were the most important sources of innovation, and self-teaching seems to be the predominant modus vivendi. A few interviewees said that there was nothing new in winemaking, so no need for innovation knowledge. While some of the larger wineries have their marketing personnel who research market trends, most wineries make do or guess.

Hira and Bwenge (2011, p.62) also went on to point out that “the limited nature of innovation dissemination reflects that a number of interviewees mention the lack of any agricultural extension agency for the industry”. Aylward (2002) found that in contrast to the Canadian perspective on innovation that the Australian wine industry had benefited from industry-led research and development, which fostered the image of Australia as a market leader in terms of innovation and experimentation. The need for a standardised approach towards research and development has been suggested so that both smaller, niche wineries and larger operators could capitalise on technological advances in order to attract a greater market share both at the cellar door and on the supermarket shelf (Aylward 2002).

Unless there was a proven track record for an innovative process which could enhance the managerial and organisational objectives of the wineries involved (OECD et al., 2005; Yuan et al., 2006), or provide more efficient organisational and marketing objectives through product innovations (OECD et al., 2005; Hjalager, 2009), then wineries appeared to have a cautious

approach towards innovation (Hall & Baird, 2012), particularly in the adoption of sustainable methods of wine production. However, for those wineries who did engage in innovative practices, the reasons given based on winery size that were significant were to increase productivity, to reduce energy consumption, and to reduce environmental impact (Hall & Baird, 2012).

Cullen et al. (2013) conducted a localised study in the New Zealand wine region of Waipara and found that the adoption of environmentally friendly innovations presented a dilemma to wine producers; this situation was best described in the statement that “environmental innovations...will be considered for adoption if they bring an environmental advantage. Adoption, however, also requires they bring a business advantage” (Cullen et al., 2013, p.47). Similarly, another study by Forbes et al. (2013) conducted in the same region found that the costs incurred through innovation often outweighed the benefits, and this resulted in reluctance on the part of wine producers to seriously consider environmental innovations as a viable option. Dodds et al. (2013) also examined business response within New Zealand wineries and their findings support the results of previous New Zealand wine industry research by Hall and Baird (2012) where it was found that the greatest obstacles to successful implementation of sustainability initiatives were in fact put in place by those in the position of governance (in this case Sustainable Wineries New Zealand [SWNZ]); a lack of clarity in terms of knowledge and information sharing as well as the perceived high membership costs of this programme amongst New Zealand wine producers was actually running counter to the aims of the programme. Dodds et al. (2013, p.14) suggest that in order to avoid this situation that perhaps there “not only should be a regulatory framework be developed for companies that export wines, but a non-regulatory framework that includes all stakeholders such as industry associations, certification agencies, and government bodies.” Whether such a suggestion is in fact both

realistic and pragmatic in terms of changing existing industry attitudes however remains to be seen.

2.8 Cooperative Arrangements

Cooperative arrangements within the international wine industry

Research that has focused on wine tourism networks and clusters has emphasised the significance to the wine industry of the reciprocal arrangements and connections (Centonze, 2010; Galbreath, 2015; Hall et al., 1997; Kesar & Ferjani, 2010; Larreina & Aguado, 2008; Lewis, Byrom, & Grimmer, 2015; Martin & Williams, 2003; Marshall & Shaw, 2000; Missens et al., 2010; Ratten, 2017; Szivas, 1999; Salvado, & Kastenholz, 2018; Telfer, 2001a). The key role in the development of local wine routes that co-operative arrangements and innovation provide has been noted as a growing area of importance within the global wine industry (Gilbert, 1992; Grimstead & Burgess, 2015; Hall & Macionis, 1997; Hashimoto & Telfer, 2003; Jaffe & Pasternak, 2004; Levy & Lubell, 2018; Muscio, Nardone & Stasi, 2017). Research in the Niagara wine region by Telfer (2001a) noted how co-operative behaviours resulting from an extensive level of collaboration within wine and tourism business had a flow on effect to other organisations involved in agriculture and food, regional wine councils, research bodies and Government agencies. Collaboration and shared learning were highlighted by Marshall and Shaw (2000) as playing a key part in the successes experience by Australian wine tourism clusters. Both of these processes were also shown to enable firms to also use these learnings to develop competitive advantage (Marshall & Shaw, 2000).

The value that can be achieved through knowledge sharing within wine tourism networks was the catalyst for Turner's (2010) study of the English wine industry. The findings from this research indicated that new market entrants were able to gain access to existing knowledge structures and resources if they had access to either public or private capital (Turner, 2010).

Karafolas (2005) studied the Greek system of co-operative arrangement and knowledge sharing based on the “Wine Roads of Northern Greece” programme which involved associated leading wine producers working towards the common goal. This programme was designed to facilitate wine tourism through a focus on the investments needed to improve existing knowledge structures (Karafolas, 2005). Knowledge designed to improve the quality of local wine tourism related products and services was shared through local food and wine networks; the point of difference with this endeavour was that it also was underpinned by a collective desire to use wine tourism as a tool to support and promote the cultural heritage of Northern Greece (Karafolas, 2005). Similar knowledge frameworks have been adopted in Italy in terms of the promotion of cities as part of a wider wine tourism network coupled with the promotion of the inclusion of innovative environmental protection initiatives which have been undertaken by local wineries (Hall et al., 2000).

There is no guarantee that tourism-based SMEs will engage in cooperation, however. Misunderstandings surrounding industry governance policies were cited by Thomas (2005) as one of the main reasons for the non-adoption of collaborative partnerships as businesses struggled to see the relevance of particular policies to their organisation. Geographical isolation and financial constraints were also found by Alonso and Li (2010) to affect the formation of collaborative alliances within the Western Australian wine industry. Centzone’s (2010) research into the Hudson Valley wine region in New York State argues that the success of wine clusters is dependent on collaboration. Mueller and Sumner (2006, as cited in Centonze, 2010) highlighted the importance of wine clusters for regional development through recognising that research, industry standards, and collaborative local networks and associations help the wine industry run more effectively and competitively, and this idea has gone on to become an important theme in further studies within this area (Missens et al., 2010; Ratten, 2017; Salvado,

& Kastenholz, 2018). The positive effect that wine clusters can have on policy development is perhaps best summarised by Grimstead (2011, p. 16) who states:

Wine tourism areas comprise a complex layer of environmental demands and challenges for both providers and tourists. The use of a cluster framework to analyse these issues will lead to a greater understanding of the differences between perceptions of sustainability in the tourism and wine producing aspects of the businesses, differences between big or small businesses and differences in the way two countries deal with and support sustainable practices.

Alliances

Marketing strategies which concentrate on building wine tourism demand has seen greater collaboration between wineries and like-minded business, such as restaurants, cafes accommodation and boutique food producers (Lambert, Alexander, & Schenkel, 2015; Loureiro & Cunha, 2017; Telfer, 2001a). This collaboration is significant for increasing visitor traffic within wine regions as selling directly to tourists on-site can yield a higher price premium for wine producers than that achieved through traditional retail outlets (Brunori & Rossi, 2000). Local wines can provide a valuable stream of revenue for restaurants (Forbes & Kennedy, 2016; Macionis & Cambourne, 1998a). Wine tourism networks are used by tour operators to create packages based around visits to the producers of local wine and food (Garibaldi, Stone, Wolf & Pozzi, 2017; Scherrer, Alonso & Sheridan, 2009); these package tours have also been used to promote wine festivals as tourist attractions (Brown & Getz, 2005). The intertwining of local food and wine networks in the Napa Valley wine region in California are cited by Barber (2008) as an example of the value that can be gained in terms of not only distributing gaining a positive reputation for regional produce. Hall et al. (2000) noted that the use of collective networks and collaboration is not only valuable in regard to building strong

distribution networks, but could also aid in providing additional value to the off-site marketing strategies of the wineries concerned.

Clusters are defined by Porter (1990) as interconnected companies or associated institutions linked not only by their geographical proximity, but also by a shared bond based on their production needs. These shared bonds provide the foundation for not only the dissemination of ideas, but ultimately the trading of ideas based around the techniques and knowledge utilised in the production of wine and food tourism (Grimstead & Burgess, 2014; Woodfield & Husted, 2017). On this note Macionis and Cambourne (1998b, p.19) suggest that the active development of these links designed to improve the wine tourism experience for the consumer can help by the identification of opportunities for cross-promotion through which “the wine, food and tourism sectors can develop a strong regional culinary image, while at the same time greatly increasing their share of the tourist dollar.”

Fostering collaboration and co-operation within the wine industry at the governmental, regional and sub-regional levels along with the formation of relationships with local wine and tourism organisations is vital for the reinforcement of strategic links within destination brands (Alonso & Northcote, 2008; Alonso, 2012; Demhardt, 2003; Di-Gregorio & Licari, 2006; Gnoth, 2002; Hojman & Hunter-Jones, 2012; Simpson & Bretherton, 2004; Tzimitra-Kalogianni et al., 1999). The ability of strategic alliances to increase sales of both wine and wine-related merchandise along Canada’s Niagara Wine Route has been noted by Telfer (2001b) as an instrumental factor in the development of this routes’ destination brand. Telfer (2000a, 2000b, 2001b) cites that the alignment between regional producers, wineries chefs, farmers’ markets and tour operators as part of the “Tastes of Niagara” campaign has served to develop the promotion of local produce available at the destination. Promotion in the form of joint advertising and production related opportunities were noted by Wargenau and Che (2006) as playing a key role in the growth of wine industry alliances in the Southwest Michigan wine

region in the United States. Shared knowledge within the Napa Valley wine region of California was also cited by Taplin (2010, p.21) as being fundamental in creating a local wine industry which was “unambiguously associated with the production of high status products, the means whereby such excellence could be easily replicated with sufficient resources increased.”

The entry of new firms into the Napa Valley market was one point where Taplin (2010) noted that there was less investment placed on relationship building due to newer firms having easier access to existing tacit knowledge; this went against the grain of the usual co-operative behaviour exhibited by older wineries in the region. Also of interest on in this regard is that Taplin and Breckenridge (2008) took the viewpoint in their research into the North Carolina wine region in the United States that the sharing of knowledge between wineries can lead to a decline in the level of innovation exhibited between firms. This study stated that “co-operative relationships that involve information sharing between individuals within the industry (particularly winemakers and growers) persist, but asymmetrical relations between large and small firms are emerging and this might eventually erode the innovation potential of this dynamic cluster” (Taplin & Breckenridge, 2008, p.7).

Collective entrepreneurship was a theme explored by Missens et al. (2010) who found that this form of knowledge sharing was critical for economic development within indigenous populations; exploration of this theme by Larreina and Aguado (2008) in the Spanish wine region of Rioja determined that measuring the economic impact of wine clusters on a local economy was significant for ascertaining the particular factors that drove collaboration. A number of SMEs that were clustered within a close geographical proximity in Rioja were found to have a profound effect on the local economy (Larrenia & Aguado, 2008). This same effect had been witnessed by the researchers have occurred in Chilean wine regions which are spread out over a narrow stretch of land, leading Larreina and Aguado (2008, p. 155) to note that “the lack of spatial proximity and commonalities is evident in the Chilean wine sector”, and that

this effect had served as a hindrance in successful wine tourism cluster development throughout Chile. Due to the attitudes of some winery managers towards wine tourists being discovered by Hojman and Hunter-Jones (2012, p.20) as impeding the development of Chilean wine tourism the authors offered the following advice:

Consumers, who live thousands of miles from the respective wineries, literally on the other side of the world, are buying high quality, very expensive wines. Some of these consumers visit, or revisit, the producing country and winery. They expect high, or top, quality hospitality services, and they are prepared to pay accordingly. Refusing to provide the hospitality services expected by international consumers is incompetent winery management. Some of these visitors are already in a long-term relationship with the wine, if not the winery (even if the winery management does not know that they are). As to the rest of the visitors, their visit offers the winery a unique opportunity to start such a relationship.

Convincing wineries to become involved in co-operative activities formed the basis of research by Hira and Bwenge (2011). This study found that wineries in the British Columbia winegrowing region of Canada required institutional support, and with this guidance it was both large and small wineries within the region could successfully export their products. The institutions who provided the support for these wineries had to take a long-term approach to their strategic vision as Hira and Bwenge (2011, p. 77) point out that “adjustments cannot occur in the absence of a long-run view of the industry as a whole, or the growth of the policy and collective networks of the industry”. In order to encourage industry growth and not hinder the development of co-operation between wineries and governing bodies all parties needed to realise that both time and financial support are critical, and as such the strategic orientation must be in line with the end goal in order to maximise the benefits that wine industry growth

presents (Hira & Bwenge, 2011; Hojman & Hunter-Jones, 2012; Lambert, Alexander, & Schenkel, 2015; Loureiro & Cunha, 2017).

2.9 Tourism and Marketing

Destination attributes

The variety of attributes that combine to attract wine tourists to a destination defines the direction for the wine tourism marketing strategies (Byrd et al., 2016; Charters & Ali-Knight, 2002; Ferreira. & Hunter, 2016; Getz & Brown, 2006; Terziyska, 2017). Important attributes which underpin the experiential elements that play a key role in the decision to visit the cellar door for wine tourists include not only the location itself and the scenery, but also encompass the climate of the region as well (Getz, 1999; Santos, Ramos & Almeida, 2017; Williams, 2001a). Carlsen and Dowling (1998) took the foundations that these attributes provide and suggested that non-wine related activities can also serve to build a picture of an overall regional experience. These extracurricular activities, coupled with what wine tourists perceive to be educational opportunities presented by a winery visit, are prime motivating factors in their decision to travel to vineyards (Carlsen & Dowling, 1998). Utilising the uniqueness of destination attributes in terms of the competitive positioning of wine regions accounts for the growth in the number of wine tourism regions worldwide (Williams, 2001a). To rise above the offerings of other competing wine regions Williams (2001a, p.54) notes that the key in creating a memorable experience for the visitor relies on imagery that is “based on a strong appreciation of distinct natural and cultural elements, which cannot be replicated elsewhere.”

Wine and food festivals

One of the key areas of growth in terms of wine tourism research concerns that of wine and food festivals, highlighting the importance of such events in terms of both a branding opportunity and a revenue source (Axelsen & Swan, 2010; Hall & Sharples, 2008; Hashimoto & Telfer, 2008; Kruger et al., 2012; Laing, Frost & Kennedy, 2018; Lee & Arcodia, 2011; Lee, Sung, Suh & Zhao, 2017; Rivera Jr. et al., 2009; Telfer, 2003). Key research topics within this area include tracing the historical development of wine and food festivals and the themes which these events adopt (Barth & Salazar, 2010; Bruwer, 2002c, 2003; Cambourne et al., 2000; Frochot, 2000; Hall & Sharples, 2008; Hashimoto & Telfer, 2008; Houghton, 2008; Kruger et al., 2012; Lee & Arcodia, 2011; Taylor & Shanka, 2002; Telfer, 2003) while the location has also been recognised as an key ingredient in their success (Axelson & Swan, 2012; Cambourne et al., 2000; Frochot, 2000; Hall et al., 2000; Hall & Sharples, 2008; Poisson & Chen, 2010; Taylor & Shanka, 2002; Telfer, 2003).

The opportunities available for relationship marketing between wine brands and festival attendees is viewed as being critical (Yuan et al., 2004; Ye et al., 2017), and as a result a typology designed to define the characteristics of what constitutes a wine festival participant has been attempted (Houghton, 2008). Packages which combine special events with opportunities for winery visitation have become increasingly important as a method of attracting younger demographics (Axelsen & Swan, 2010; Byrd et al., 2016; Kruger, Rootenberg & Ellis, 2013; Lee et al., 2017; Poisson & Chen, 2010; Yuan et al., 2004), presenting the opportunity to introduce the concept of wine tourism to these markets. Wine festivals also create a platform for producers, buyers and tourism industry operators within the wine industry to either forge new links or build on existing ones (Getz, 2000). Axelsen & Swan (2010) support this need for dedicated wine events as a promotional tool by pointing out that

the cost effectiveness of wine festivals; this direct economic benefit coupled with the chance to not only showcase a large variety of wines in a centralised location but to also access a potential consumer base has attracted many wineries to become involved in festivals (Tassiopoulos et al., 2004; Yuan et al., 2004).

Houghton (2001, 2002) studied whether wine festivals actually played a significant role in predicting whether Australian wine festival attendees would actual engage in future winery visitation. This study found that a high level of repeat visitation to the same wine festival amongst participants existed, and that those surveyed who had a positive festival experience were more willing to attend other wine festivals (Houghton, 2001, 2002). Houghton (2001, 2002) also discovered the amount of wine purchased by festival attendees increased post-festival when compared with their purchase behaviour toward wine products prior to attending a festival. The relationship between a positive emotional experience onsite at a festival coupled with the associations with the wine products consumed are cited by Mason and Paggiaro (2012, p.7) as “factors influencing satisfaction and consequently behavioural intentions of festival participants”. The ability of wine festivals to be used as a platform through which consumers are introduced to multiple varietals of wine from a certain region (Houghton, 2001, 2002) alongside regional culinary delicacies highlights the potential for growth in the relationship between wine and food tourism (Alonso & Liu, 2011; Hall & Gössling, 2016; Hall & Sharples, 2008; Plummer et al., 2005; Smith, 2000). Wine and food festivals in conjunction with cellar door sales are viewed as an essential means for the promotion of wine tourism to consumers (Hall & Sharples, 2008), and the value of these events in creating awareness amongst younger audiences of wine brands is key in terms of creating future brand loyalty (Bruwer & Kelly, 2015; Bruwer et al., 2018; Molina et al., 2018).

Regional tourism promotion

Investigations into the role played by the promotion of regional tourism as a vehicle for attracting visitors to local wineries has resulted in a wide array of studies; the Australian market has been the focus of a number of researchers in this area (Alant & Bruwer, 2010; Hall & Johnson, 1997; Hoffman et al., 2000; Morris & King, 1997; Schrieber, 2004), whilst other studies have focused on the Mediterranean (Hall & Mitchell, 2000), Canada (Telfer, 2001a, 2001b; Wilkins & Hall, 2001), Chile (Sharples, 2002; Woods, 2002) and the South African wine markets (Bruwer, 2003; Ferreira & Hunter, 2017). A myriad of platforms exists to enable such promotion; internet sites, social media portals, hard-copy brochures, festivals, exhibitions, wine trails and travel shows are all aimed at targeting tourists considering visiting a winery with a plethora of information (Byrd et al., 2016; Lee et al., 2017). Identifiable indicators which incorporate the use of localised geographical features in branding and logos have been noted by Lockshin (2001) as being important for Australian wine regions in solidifying existing regional branding. Regionally based themes used by websites in the promotion of wine tourism have proven to be key to the development of long-term consumer relationships the numerous brands that might co-exist within a particular region (Bruwer, Gross & Lee, 2016; Ferreira & Hunter, 2017; Thach & Cogan-Marie, 2018). Selling the wine tourism experience as a total package to the end consumer is one area where Beams (2003, p. 209) contends that “wine tourism also needs to consider how it fits in with and connects to, other activities within a regional area.” Promoting the wine tourism experience in isolation to other competing regionally-based tourism experience therefore can be counterproductive, and better integration of promotional materials is a definite consideration for wine regions (Beams, 2003).

Regeneration of rural areas which have previously been in decline along with the improvements made in tourism infrastructure in European wine regions (Hall et al., 2000; Hall & Mitchell,

2000) attest to the ability of wine tourism to provide a valuable stream of revenue to local economies. Morris and King (1997) noted that individual wineries in the Augusta-Margaret River region in Western Australia directly benefited from regional growth. The creation of regionally branded wine regions as a catalyst for both growth and repeat winery visitation within the wine regions of South Australia was the focus of research by Alant and Bruwer (2010). This study adopted a theoretical perspective based on the development of winery visitation sets (VSs) and served to demonstrate “that the visitation patterns of wine tourists to winery cellar doors can be conceptualised as a theoretical construct” (Alant & Bruwer, 2010, p. 206). This underlines that visitation patterns are critical to the success of promotional and branding strategies of not just individual wineries, but also at the regional level of wine tourism promotion (Alant & Bruwer, 2010). Integrating regional and national strategies within wine tourism has been cited as crucial to effective tourism promotion in the Mediterranean region (Hall & Mitchell, 2000; Veres et al., 2008); the dangers inherent when there is an absence of a coherent regional wine tourism promotional strategy in place are noted in Hall & Mitchell’s (2000, p. 47) observation that “wine regions in the Mediterranean have come to rely on tourism marketing clichés in relation to the wine heritage of a region, or to concentrate on developing wines and experiences that have little to do with the region.”

2.10 Chapter summary

This chapter examined the existing body of literature of international sustainable winegrowing and wine tourism research. When considered from an international perspective it is clear that the association of wine tourism with sustainable winegrowing practices offers multiple opportunities for customer engagement and business growth; the recognition of both the cellar door and wine festivals as marketing tools in terms of onsite and post-visit consumer behaviour illustrates this. Capturing these opportunities would not only enable wineries to expand beyond their existing market and into younger demographics (and thereby development future

generations of wine tourists), but also encourage innovation and knowledge sharing amongst existing wine industry networks. As the literature demonstrates there are areas where a research voids currently exist; the most notable of these is in research into social justice issues in terms of sustainable winegrowing practices. The treatment of migrant workers is an important area of study within the global wine industry due to the fact that the employment of migrants provides the backbone of labour in many regions (such as the Napa Valley wine region). Issues that require further exploration are presented in terms of the challenges that increases in direct contact with wine tourists creates; this is of particular concern in the area of biosecurity where the approach of governing bodies appears to be less than proactive and is based on a largely reactive stance. The following chapter outlines how the New Zealand wine industry has approached issues concerning sustainable winegrowing practices and wine tourism.

Chapter 3

New Zealand research on wine tourism and sustainable winegrowing practices

3.1 Chapter introduction

Research into wine tourism and sustainable wine practices in New Zealand first gained momentum in the mid-1990s (Mitchell & Hall, 2006) as a result of academic studies which focused on the areas of rural and special interest tourism (Hall, 1996, 2005a; Hall & Johnson, 1997; Hall et al., 2000) and research into the consumer behaviour of wine tourists at the cellar door (Beverland et al., 1998a, 1998b; Fountain & Charters, 2010; Hall & Johnson, 1997; Longo, 1999; Machin, 2000; Mitchell, 2004; Mitchell & Hall, 2006). By the mid-2000s two-thirds of the wine tourism research literature originated from Australia and New Zealand (Mitchell & Hall, 2006). It is therefore important to note the significance of such prior research in exploring both the past and present challenges that face the New Zealand wine industry, as the various lessons learnt may also be of significance to international wine regions.

Research into the potential that exists within the New Zealand wine industry to become a significant tourist drawcard informed the research of Reid (1990). Utilising regionally based case studies allowed Reid (1990) to capture viewpoints of New Zealand based viticulturists from the supply-side perspective in order to provide an overview of the state of the local wine industry. As research into New Zealand wine tourism has grown, so too has the development of the variety of streams around which this literature is based (Mitchell & Hall, 2006). In order to provide context for the longitudinal and comparative components of this thesis, a brief history of the New

Zealand wine industry is provided in this chapter. This is followed by an overview of past and current New Zealand based sustainable wine and wine tourism research. The key findings for each section that featured in the 1997, 2003 and 2010 surveys will also be highlighted in this chapter through the use of tables to indicate how these findings relate to the literature.

3.2 Historical overview of the New Zealand wine industry

This section will examine how the New Zealand wine industry began before investigating the changes which have occurred within this industry due to regulation and governance. The relationship between New Zealand wine and the national brand, as well as issues concerning oversupply within the New Zealand wine industry, will also be highlighted.

Historical context

The introduction of non-native wine grapes from vines in New South Wales marked the beginning of the New Zealand wine industry (Table 3.1), and these grapes were first planted in September 1819 by Samuel Marsden (Thorpy, 1971). The visit of French explorer Dumont d'Urville in 1840 to Australian viticulturalist James Busby's vineyard in Waitangi has been noted as the first time that New Zealand wines were sampled by an overseas visitor (Cooper, 1993; Hall, 1996; Haydn & Talmont, 1997; Thorpy, 1971).

Table 3.1: Historical overview of the development of New Zealand wine tourism

Year	Events
1819	A localised wine industry starts with the introduction of non-native wine grapes seeded from vines located in New South Wales planted by Samuel Marsden in September, 1819 (Thorpy, 1971).
1840	French explorer Dumont d'Urville is recorded as the first wine tourist in New Zealand (Cooper, 1993; Hall, 1996; Haydn & Talmont, 1997; Thorpy, 1971).
1840-1890	New Zealand wine industry knowledge and practices advance with the arrival of European winemakers. These winemakers bring with them new techniques and imported (Hall 1996; Thorpy 1971). The threat of disease and pests bring about some significant challenges for wine producers (Cooper, 1993).
1890s-1930s	Nation-wide wine industry development is hampered as the Prohibition era gains traction within New Zealand (Cooper, 1993).
1976	Regulatory changes makes legal to buy wine directly from the cellar door at New Zealand wineries or take wine into cafés (Hadyn & Talmont, 1997).
1980	Winery tours are first offered by Vidals Winery in Hastings. Wine sales, a wine museum and a restaurant are also on site at Vidals Winery as well (Graham. 1980, as cited in Hall & Johnson, 1998).
1989	The Sale of Liquor Act (1989) is passed and becomes law.
1990	Reid (1990) conducts the first New Zealand based wine tourism based research study.
1990s-present	Cellar door sales become increasingly important for New Zealand based wineries (Charters et al., 2009; Christensen et al., 2004; Fountain, 2011; Hall, 1996; Hall & Johnson, 1997; Reid, 1990; Treloar et al. 2008). Local wine and food tourism networks undergo significant development (Christensen et al., 2004).
1995	Sustainable Wineries New Zealand is formed and sustainable wine production methods gain momentum (SWNZ, 2018a).
1997	The first iteration of the New Zealand National Wineries' Survey is conducted by Hall and Johnson (1997). Registrations for the Wine Institute of New Zealand (WINZ) sees 262 members registered by the end of 1997 (WINZ, 1997a).
2003	The second edition of the New Zealand National Wineries' Survey is conducted by Christensen et al. (2004). In a new addition to the survey a series of questions are asked regarding biosecurity measures employed by New Zealand wineries (Christensen et al. 2004).
2006-present	The New Zealand wine industry experiences oversupply issues, causing major problems for New Zealand wine producers and an over-production of the Sauvignon Blanc varietal (Deloitte, 2010).
2009	Bulk wine prices falling to due to an overly large harvest (NZ Wine, 2011).New Zealand wine tourism figures are cited as 475,000 international and domestic visitors annually (Ministry of Economic Development, 2009),
2010	The third iteration of the New Zealand National Wineries' Survey is conducted by Baird & Hall (2010).
2011	The New Zealand wine industry continues to deal with the oversupply issue first noticed in 2006, and recognises that this issue has the potential cripple the local wine industry (NZ Wine, 2011).
2012	Sustainable Wineries New Zealand fails to reach the target of 100 per cent uptake for its sustainable winegrowing programme (Baird & Hall, 2014).
2017	New Zealand Winegrowers develop a biosecurity strategy and enter into the Government Industry Agreement (GIA) with the New Zealand Government (New Zealand Winegrowers, 2018d).
2018 - present	New Zealand wine tourism figures are cited as 712,135 international visitors annually (New Zealand Winegrowers, 2018a). The <i>New Zealand Winegrowers Biosecurity Strategy</i> is launched by New Zealand Winegrowers (2018b).

Sources: Baird, 2012; Baird & Hall, 2014; Charters et al., 2009; Cooper, 1993; Deloitte, 2010; Fountain, 2011; Hall, 1996, 2003, 2005a; Hall & Johnson, 1998; Haydn & Talmont, 1997; Ministry of Economic Development, 2009; NZ Wine, 2010; New Zealand Winegrowers, 2018a, b, d; Reid, 1990; Thorpy, 1971; Treloar & Hall, 2008.

Expertise was required to take New Zealand wine beyond being just a hobby for local viticulturists, and the arrival of European winemakers marked a turning point where new imported varieties and techniques served to push New Zealand wine into the realms of a fully-fledged professional industry (Hall, 1996; Thorpy, 1971). Significant problems existed for these new market entrants however; the presence of pests, the threat of disease, and the Prohibition era all served to provide challenges which tested the tenacity of early pioneers within the New Zealand wine industry (Cooper, 1993).

The mid-1970s marked the first time that regulatory changes allowed patrons to legally take wine into cafés or buy directly from the cellar door at New Zealand wineries (Hadyn & Talmont, 1997). The advent of this change in 1976 is arguably one of the first cultural touchstones which made New Zealand winegrowers even consider the possibility of wine tourism (Hadyn & Talmont, 1997). Although this consideration was at first slow to catch on, traction within the New Zealand wine industry was first noted as occurring with Hastings-based winery Vidals offering not only sales of wine, but also a restaurant and wine-themed museum (Graham, 1980, cited in Hall & Johnson, 1998). However, the notion of wine tourism was approached by New Zealand wine growers with a degree of cynicism however (Mitchell & Hall, 2006); the value of this concept in terms of educating consumers, encouraging brand loyalty and supplying an attractive additional source of revenue for wineries was not taken seriously for another decade.

The ability of wine tourism to provide an additional source of revenue unconstrained by the margins enforced through wholesale and retail distribution led to a gradual adoption by Old and New World wine producing regions of this concept (Hall & Johnson, 1998; Hall et al., 2000). The New Zealand wine industry had a much slower rate of adoption of wine tourism than their Australian counterparts due to a lack of institutional support and expertise (Hall &

Johnson, 1998); this affected smaller winegrowers significantly as access existing local distribution channels was often out of their reach financially (Hall & Johnson, 1998). The lack of support also served as an obstacle to exports of New Zealand produced wine by smaller companies who lacked the experience, knowledge and capital that larger companies employed when promoting their wine internationally (Hall & Johnson, 1998) and led to a gravitation towards direct cellar door sales by smaller New Zealand wineries in order to maximise revenue (Baird, 2012; Beverland et al., 1998a, 1998b; Beverland, 1999b, 1999c, 1999d, 2000; Charters et al., 2009; Christensen et al., 2004; Fountain & Lamb, 2011; George, 1996; Hall & Johnson, 1998; Reid, 1990; Treloar & Hall., 2008).

This attitude of cynicism among winegrowers was found by Christensen et al. (2004) to have shifted towards a more positive attitude in their iteration of the New Zealand National Wineries' Survey conducted in 2003. Christensen et al. (2004) argued that from the supply-side perspective there was a greater recognition of wine tourism occurring within the ranks of New Zealand wine producers. In the period leading up to this survey local wine and food tourism networks had also undergone significant development (Christensen et al., 2004). This new level of seriousness with which New Zealand wineries were treating wine tourism saw increasing industry confidence occur as wineries were began to recognise that wine tourists were as an important source of revenue at the cellar door (Christensen et al., 2004). The 2010 survey saw that the desire of visitors to meet and interact directly with winemakers was no longer perceived to be as important as it was in the 1997 and 2003 surveys (Baird, 2012). However, the educational function was still noted as being important but could easily be done by staff members who had the necessary product knowledge (Baird, 2012). Although motivating factors such as escapism and indulgence were still seen as important by wine tourists, the addition of sustainable practices also had an effect on consumer perceptions, particularly as having a Carbon Zero certification was cited as a reason by winery owners as to

why consumers visited their winery (Zahraie, Everett, Walton & Kirkwood, 2016). Word of mouth, along with referrals from family and friends, were also cited as valuable tools for encouraging winery visitation in the 2010 survey (Baird, 2012), while the growth of wine festivals in New Zealand has also been noted as a key factor in introducing both Generation Y millennial wine drinkers to the concept of wine tourism (Fountain, 2018). In order to sustain this growth, support of governing bodies is required; the following section will detail how governance and regulation is handled in the New Zealand wine industry.

Governance and regulation within the New Zealand wine industry

The need for a clear system of governance to be implemented within the New Zealand wine industry came as a direct result of the growth and development experienced since the mid-1970s. The Wine Institute of New Zealand [WINZ] was established in 1976 in order to create a vision and strategy for the future direction of the industry. The first form of regulation to arise from the formation of WINZ was the *Winemakers Levy Act 1976* which was designed to provide co-ordination amongst New Zealand wine producers (Hall & Johnson, 1998). Registration of winemakers was ensured by the *Winemakers Act 1981* which was repealed by the *Sale of Liquor Act 1989* with the introduction of a levy on wine sold within the New Zealand domestic wine market (Hall & Johnson, 1998). Ensuring that New Zealand wine featured in trade shows and was promoted within trade and media networks was another key reason for the formation of this organisation (Hall & Johnson, 1998). Other tasks which WINZ were tasked with the responsibility for were issues surrounding quality control and resource management (Hall & Johnson, 1998).

The New Zealand Wine Exporters Board and the New Zealand Wine Guild were both organisations who provided early support mechanisms for the producers of New Zealand wine (Hall & Johnson, 1998). Multiple sources now exist in 2019 that provide support to the New

Zealand export industry; these include Sustainable Wines New Zealand (SWNZ), New Zealand Winegrowers, the Ministry of Business, Innovation and Employment [MBIE] and the Ministry of Primary Industries [MPI]. Other organisations such as Trade New Zealand, NZ Wine, NZGVIG (NZ Society of Viticulture and Oenology) and Tourism New Zealand are also all involved in the current promotions and strategies behind New Zealand wine exports which form the basis of what is known as Brand New Zealand (New Zealand Winegrowers, 2018a).

The positioning of New Zealand wine within the national brand

It is not without coincidence that the New Zealand wine industry has grown substantially since the 1980s along with international tourism (Baird & Hall, 2014). Both industries have been central to New Zealand's brand positioning with respect to being 'natural' and their marketing efforts leverage off each other (Brodie, Benson-Rea, & Medlin, 2016; New Zealand Winegrowers, 2018c). The export value of the New Zealand wine industry as of June 2018 was more than NZ\$1.7 billion a year, reflecting high export growth (New Zealand Winegrowers, 2018c). As a result, the industry supports more than 20,000 full-time jobs along with substantial seasonal employment (New Zealand Winegrowers, 2018c). However, the industry is not without major challenges, and is marked by substantial international competition and the vagaries of grape quality and tonnage being dependent on environmental factors such as the weather. In addition, there has been no change to per capita domestic consumption meaning that the focus needs to be on exporting, hence wine tourism is valued as a means of generating market awareness and developing new customer relationships (New Zealand Winegrowers, 2018c). This means that the vast majority of wineries either have a cellar door where visitors can sample and purchase wines or can be otherwise visited by appointment (Baird & Hall, 2014).

As of 2018 New Zealand had 697 wineries (Table 3.2), 54 more than 2009 but down from the high of 703 in 2012 (New Zealand Winegrowers, 2018c). The number of growers has declined

from a high of 1,073 in 2009 to 699 in 2018, although the total area under grapes has grown (Table 3.3) from 31,964 ha to 37,969 ha over the same period (New Zealand Winegrowers, 2018c). The average area of the 2,031 vineyards in the country was 18.5 ha with production being dominated by Sauvignon Blanc which accounts for around 61 per cent of all area under wine grapes and 77 per cent of all white wine production (New Zealand Winegrowers, 2018c). Red wine is similarly dominated by a single variety, with Pinot Noir accounting for 72 per cent of red wine production (New Zealand Winegrowers, 2018c).

Table 3.2: New Zealand wineries by size 2009-2018

Winery size	Year									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Small	577	605	697	622	617	611	587	581	582	603
Medium	60	61	60	71	71	65	69	78	77	77
Large	6	6	6	10	10	23	17	16	18	17
Total	643	697	703	698	699	673	675	675	677	697

Source: New Zealand Winegrowers (2018c).

Note: Small wineries are classified as annual sales not exceeding 200,000 litres; Medium-sized wineries are classified as annual sales between 200,000 and 4,000,000 litres, and large wineries are classified as having annual sales exceeding 4,000,000 litres.

Table 3.3: New Zealand wineries, winegrowers and production areas 2009-2018

	Year									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of wineries	643	697	703	698	699	673	675	675	677	697
Number of winegrowers	1073	1128	853	824	835	858	762	747	726	699
Producing area (ha)	31,964	33,200	34,500	35,337	35,182	35,510	35,463	36,226	36,943	37,969

Source: New Zealand Winegrowers (2018c).

Naturalness and sustainability has become a driver of New Zealand’s tourism and wine branding and is also inherent in national branding (Brodie, Benson-Rea, & Medlin, 2016; Hall, 2010; Hall & Baird, 2014). For example, New Zealand Winegrowers, the peak industry body, placed a premium on the importance of sustainability with their 2016 *Annual Report* stating, “The sustainability story of New Zealand wine is being shared with wine influencers and consumers around the world” (New Zealand Winegrowers, 2016, p. 19). However, despite the importance attached to sustainability at a national level there is relatively little known about sustainable behaviours and attitudes at the winery level. This is an important issue for not just New Zealand winegrowers, but also global wine producers given that wineries have a significant role in both the wine and tourism industries (Hall & Baird, 2014).

Oversupply issues and their effect on the New Zealand wine industry

Over the past two decades one of the key issues facing the New Zealand wine industry was the situation of oversupply which has threatened at times to cripple the industry (NZ Wine, 2010). The combination of rapid expansion of the New Zealand wine industry, dry weather and larger than expected harvests in both 2008 and 2009 resulted in key markets experiencing a situation of oversupply of Sauvignon Blanc. Attempts to target export markets such as the United Kingdom, Australia and Asia with lower-priced wine were not as successful as first hoped (NZ

Wine, 2010). A direct consequence of this situation of oversupply has been the need amongst New Zealand winegrowers to emphasise direct-to-consumer cellar door sales and the promotion of wine tourism in order to proactively deal with this issue of oversupply.

3.3 Winery profile

Recognition of the ability of cellar door sales to provide a key element for wineries to increase brand loyalty whilst maximising profits margins is one of the main drivers of wine tourism within the New Zealand wine industry (Fountain, 2018; Hall & Prayag, 2017; Hall et al., 2000; Mitchell & Hall, 2006). Given that the New Zealand wine industry is prone to market fluctuations (New Zealand Winegrowers, 2018c) it is critical that winery visitation is viewed as playing an integral part in the business strategies of New Zealand wineries (Hall et al., 2000; Mitchell & Hall, 2006). Increasing the appeal of a winery through adding tourism elements to an existing business can be detrimental to the business concerned if no prior planning and thought has been given as to how to best incorporate tourism into what the winery itself presently offers (Hall et al., 2000; Mitchell & Hall, 2006).

Geographical location, winery size, and whether or not additional value-based propositions such as cellar door sales and in-house tasting facilities are offered constitute the key foci of the extant literature which describes New Zealand winery characteristics. This chapter will now move to examine each of these aspects. Table 3.4 provides a summary of results from the 1997, 2003 and 2010 New Zealand winery surveys based on winery profile.

Winery Location

Taylor et al. (1998) states that location can be one of the main challenges for wineries when considering the geographical distance and the quality of infrastructure available to facilitate the marketing efforts of wineries. A lack of proximity to towns or cities alongside inadequate infrastructure could discourage potential wine tourists from visiting local wineries (Alonso, 2005; Fountain, 2016; Taylor et. al., 1998; Thompson & Fountain, 2017). Examinations into the relationship between the distance function of a winery from its proximity to a major destination have been conducted (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997; Thompson & Fountain, 2017) in order to investigate whether this proximity provides a driver for both initial and repeat visitation by wine tourists. The length of stay by wine tourists once they are onsite at wineries has also been noted as an important factor (Hall & Mitchell, 2002a).

Geographical aspects such as the scenery and setting of a winery are also an important catalyst for attracting visitors (Austin, 1993; Fountain, 2016, 2018; Fountain & Thompson, 2017; Mitchell, 2005). Mitchell (2005) has stated that the anticipation of the on-site experience itself, and the post-visit evaluation of this on-site experience is critical for repeat winery visitation.

Table 3.4: Summary of results from 1997, 2003 and 2010 surveys on Winery Profile for New Zealand wineries

Year	Author	Results
1997	Hall and Johnson	<ul style="list-style-type: none"> - The majority of winemaking operations were small scale with 78 per cent of New Zealand wine producers stating that less than six full-time employees are employed by their winery. - Cellar door sales were seen to be very important. - In terms of tasting fees almost half of the wineries surveyed (48 per cent) provided a refund, while 37 per cent opted to give no refund. 15 per cent of survey participants did not specify the amount refunded. - The most offered service was wine tasting (93 per cent). Winery tours were offered by 57 per cent of participants, while 44 per cent offered vineyard tours. In terms of facilities, the most widely offered were picnic or entertainment areas, with 53 per cent of wineries supplying these. - Wheelchair access to the tasting room was offered by 69 per cent of wineries; however, winery and vineyard access was more restricted in terms of access.
2003	Christensen et al.	<ul style="list-style-type: none"> - The number of wineries with a turnover in excess of \$750,000 had increased, with 23.8 per cent of wineries now in this category. - The charging of tasting fees and cellar door access were both seen as both declining. - Both the numbers of international wine tourist visitors and the 40 year plus age group of visitors had increased since the 1997 survey. - The number of wineries who categorised their customers as being part of the ‘Wine lover’ segment had increased. - The main reason for visiting wineries was wine tasting. Commercial wine tours were found to be becoming more common amongst survey participants.
2010	Baird	<ul style="list-style-type: none"> - The number of wineries with a turnover in excess of \$750,000 continued to increase; this had risen to 38.8 per cent from 23.8 per cent in 2003. - The charging of tasting fees and cellar door access both remained in a state of decline, mirroring the 2003 survey trend here.

Winery Location

Taylor et al. (1998) states that location can be one of the main challenges for wineries when considering the geographical distance and the quality of infrastructure available to facilitate the marketing efforts of wineries. A lack of proximity to towns or cities alongside inadequate infrastructure could discourage potential wine tourists from visiting local wineries (Alonso, 2005; Fountain, 2016; Taylor et al., 1998; Thompson & Fountain, 2017). Examinations into the relationship between the distance function of a winery from its proximity to a major destination have been conducted (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997; Thompson & Fountain, 2017) in order to investigate whether this proximity provides a driver for both initial and repeat visitation by wine tourists. The length of stay by wine tourists once they are onsite at wineries has also been noted as an important factor (Hall & Mitchell, 2002a), and ascertaining as to whether these journeys amount to daytrips or longer stays provides vital insights into the motivations for visitation (Hall & Mitchell, 2002a). Geographical aspects such as the scenery and setting of a winery are also an important catalyst for attracting visitors (Austin, 1993; Fountain, 2016, 2018; Fountain & Thompson, 2017; Mitchell, 2005). Mitchell (2005) has also stated that anticipation of the on-site experience itself, and the post-visit evaluation of this on-site experience plays a crucial role in the decision to visit a winery.

Winery Size

The New Zealand wine industry is characterised by smaller vineyards and large-scale wine producers (Barker et al., 2001; Christensen et al., 2004; Cradock-Henry & Fountain, 2019; Hall, 1996; Hall & Johnson, 1997; New Zealand Winegrowers, 2018a). The past three iterations of the New Zealand National Wineries Survey (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997) have all considered whether or not winery size is a factor in the ability of New Zealand wineries to provide a wine tourism experience which is memorable. Obvious

differences such as variances in the number of employees and the wine production output of each individual winery aside, it has been noted by Hall (1996) that there are notable differences between attitudes towards the value of cellar door sales amongst both small scale and large scale winery operations. Smaller winery owners look towards tourism as being vital for their financial survival (Alonso, Bressnan, O'Shea & Krajsic, 2015), while larger scale New Zealand based winery operations have remained ambivalent towards recognising the value that cellar door sales offer as an additional revenue stream (Baird, 2012).

Ownership status

The type of ownership status that a winery has, along with the availability of resources, serves to inform whether or not size-appropriate wine tourism marketing strategies can actually be implemented (Beverland & Lockshin, 2000; Crick & Crick, 2015; Simpson & Bretherton, 2004a; Simpson et al., 2005). The New Zealand wine industry is made up of five levels of winery ownership; these levels are that of a sole proprietor, a partnership, a public company, a private company or a trust. Trends associated with ownership status and annual turnover have been examined in the three previous iterations of the New Zealand National Wineries Survey (Baird, 2012; Hall & Johnson, 1997; Christensen et al., 2004). Ensuring that enough staff were employed to allow wineries to deliver positive wine tourism experiences has been recognised as being a crucial element in ensuring that wine tourists have an enjoyable cellar door experience (Baird, 2012; Bruwer, Prayag, & Disegna, 2018; Christensen et al., 2004; Hall & Johnson, 1997; Hall & Prayag, 2017).

Cellar door sales

Engaging with wine tourists through the use of cellar door sales represents an important revenue stream for New Zealand wineries, both large and small, and serves as a vital component of their public relations strategies (Forbes et al., 2016; Hall, 1996; Hall & Johnson,

1997; Hall & Prayag, 2017). The effectiveness of sales at the cellar door are a contentious issue within the New Zealand wine industry, however. After basing their latest survey on a sample size of just 6.4 per cent of New Zealand wineries, Deloitte (2019, p.18) suggest in their *Growing Smarter: Wine industry benchmarking and insights 2018* report the following in regard to cellar door sales:

We note for the first time that online sales have overtaken cellar door sales with the exception of the \$NZ1.5- 5m category reflecting the growth of digital as a legitimate sales channel. It is also interesting to note that 100 per cent of respondents in the \$NZ0- \$1.5m and \$NZ1.5-5m categories had at least some direct to consumer sales, either by cellar door or online.

Developing an ongoing dialogue with customers via the cellar door has long been recognised as being important and can be achieved by simple measures such as offering visitors the opportunity to join a direct mailing list (Hall & Johnson, 1997) and via the Internet. The use of wine-related merchandise in terms of brand development and promotional opportunities has been noted by Mitchell and Hall (2006, p.48) as having a degree of influence over post-visit purchase behaviour, reinforcing the “relationship with the winery and its wine.”

Tasting room facilities

Developing ongoing brand loyalty is vital to the growth of wine tourism (Craddock-Henry & Fountain, 2019; Crick & Crick, 2015; Forbes et al., 2016; Thompson & Fountain, 2017). Alonso (2008) notes that the majority of winery visitation is undertaken by domestic travellers in New Zealand. Poor promotion of New Zealand wines and wineries to international visitors was also found in this study to be the main reason why international visitors did not choose to visit one or more wineries during their time in New Zealand (Alonso, 2008). Although as Charters et al. (2009) noted, the operation of tasting rooms potentially carries a financial burden for

wineries. Little research has been conducted into whether charging a tasting fee at the cellar door affects the experience of wine tourists. Alonso et al. (2015) argue that the service dimension of the wine tourism experience creates an obligation to purchase the product, while Roberts and Sparks (2006) contend that wine tourists in fact expect no tasting fees to be charged. The charging of tasting room fees has been found by Treloar & Hall (2008) to impact negatively on long-term customer loyalty, and that the Generation Y market in particular sees tasting room fees as an obstacle to a positive cellar door experience (Fountain, 2018).

3.4 Visitor profile

Wine tourism as an experience is made not only of the attributes and knowledge possessed by the wine tourist, but also the quality of the wine tourism product itself (Hall et al., 2000). For wineries this means that scenery, setting and general ambience all play an important part in the provision of a memorable visitation experience (Hall et al., 2000). Attributes such as the attractiveness of the destination itself combined with qualities which are unique to a particular region, such as food and other local attractions, can also serve to add value to wine tourism (Cleave, 2011; Fountain, 2016; Fountain & Thompson, 2017; Hall et al., 2000).

Issues due to the use of differing scale measures and estimation methods have been recognised by Mitchell and Hall (2006) as being problematic when accurately trying to quantify wine tourist numbers due to a lack of standardisation in terms of approach. Wine tourism figures have been criticized for opting to show the magnitude of wine tourist visitation and subsequent cellar door purchase behaviour (Hall et al., 2000; Mitchell, 2004) instead of investigating the actual motivations for deciding to embark on a wine tourism experience (Hall et al., 2000). Survey samples which do “not account for multiple visits per trip or include day trips of less than 40 kilometres” (Mitchell et al., 2006, p. 317) risk biasing such figures through underestimation of

the actual visitor figures for New Zealand wineries. A summary of results with respect to visitor profile from the 1997, 2003 and 2010 surveys is shown in Table 3.5.

Demographic characteristics

Several studies focus on New Zealand wine consumers in terms of demographic characteristics (Alonso, 2008; Beverland et al., 1998, 1999; Fountain, 2018; Longo, 1999; Machin, 2000; Mitchell & Hall, 2006). Mitchell and Hall (2006, p. 318) cite the typical New Zealand wine tourist as being “30-50 years of age, relatively well educated, professional, and in the moderate to high income bracket.” Younger, well-educated non-residents who earn less than the average income are noted by Hall and Johnson (1998) as also being typical New Zealand wine tourists. A lack of visitor number accuracy and comparability between countries in terms of wine tourist demographics has created a situation whereby it is difficult to ascertain the relationships between wine tourism and its effects on other forms of tourism activity (Hall & Johnson, 1998).

Demographic differences have been recognised at the regional level for New Zealand wineries (Hall, 1996; Huang & Johnston, 2018; Longo, 1999; Mitchell, 2004; Mitchell et al., 2000, 2001c). Mitchell (2004) found in his study of the demographic characteristics of visitors within different wine regions in New Zealand that there were clear gender and generational differences occurring. Most notably, however, is the existing level of wine knowledge that wine tourists possessed (Hall, 1996) and whether visitors came from domestic or international points of origin.

Table 3.5. Summary of results from 1997, 2003 and 2010 surveys for the visitor profile at New Zealand wineries

Year	Author	Results
1997	Hall and Johnson	<ul style="list-style-type: none"> - There was a clear imbalance between international and domestic visitors at 18.1 per cent and 81.9 per cent respectively. - The differing motivations which wine tourists had were seen to challenge the notion of wine tourism as solely special interest tourism. It was suggested that wine tourism could lead to post-visit purchase behaviour. - Commercial wine tours were most obvious form of involvement of the tourism industry at wineries, with 45 per cent of respondents indicating that their winery had been visited by a wine tour. - The idea of wine tourism as a niche activity was supported by the comparatively low involvement of the travel industry as wineries were not part of the typical itinerary of package tours. - The category of 'Wine lover' was reported as being 13.6 per cent of visitors.
2003	Christensen et al.	<ul style="list-style-type: none"> - A two-fold increase occurred in the 'Wine lover' segment which was reported at 26.8 per cent. 'Wine interested' visitors remained constant at 65 per cent and 65.9 per cent respectively. The 'Wine curious' segment declined from 21.4 per cent reported in 1997 to 7.3 per cent in 2003. - New Zealand residents are estimated to make up 67.7 per cent of winery visitors. - All categories from 40 years of age and above showing an increase. This was most significant in the 50-59 years of age group, up 3.7 percentage points, while the 18-29 years of age group fell by 6 percentage points.
2010	Baird and Hall	<ul style="list-style-type: none"> - The pattern of growth remains steady with the 'Wine lover' segment at 29.7 per cent. 'Wine interested' category declined to 62.4 per cent, while the 'Wine curious' category was less than half it had been in the 1997 survey at 10.2 per cent. - Commercial wine tours were showed the most tourism involvement with wineries (59.8 per cent), followed by local tour operators (51.6 per cent). Travel companies who include wineries in their tour packages had declined (17.6 per cent). - New Zealand residents were estimated to make up 57 per cent of winery visitors. - The 18-29 years and 30-35 years age categories were seen to have grown steadily since the 2003 survey. The 50 – 59 year age group fell by 6.1 per cent (from 21.1 per cent in 2003 to 154 per cent in 2010).

Appealing to the Generation Y market in order to increase cellar door sales represents a burgeoning research area (Beverland, 2001; Fountain & Charters, 2010; Fountain & Lamb, 2011; Treloar et al., 2004). Leisure, convenience and value for money were noted by Treloar et al. (2004) as being the key areas that New Zealand wineries should be concentrating on when marketing to younger visitors, and that older visitors tended to engage with the more educational aspects of wine production.

Understanding the varying needs of wine tourists in terms of their consumer behaviour is a key driver for attempting to increase visitor numbers and also ensuring repeat winery visitation. Hall's (1996) tripartite typology suggests a classification based on the level of wine knowledge which consumers possess; the three areas of classification are either as 'Wine Lovers', 'Wine Interested' or the 'Wine Curious'. This typology has been previously employed to estimate the proportion of each of these particular segments that exist within the New Zealand wine tourism market (Baird, 2012; Christensen et al., 2004; Hall et al., 1997; Houghton, 2008) and have allowed for important insights to be made into wine tourist consumer behaviour (Beverland et al., 1998a, 1998b; Byrd, 2016; Hall, 1996; Mitchell, 2004; Mitchell et al., 2006). Although the application of lifestyle typologies provides a robust frame of reference for wine tourist categorisation, Mitchell et al. (2006) note that they are not commonly undertaken.

Reasons for visitation

Reid's (1990) early research into the New Zealand wine tourism industry found multiple reasons existed for winery visitation. The most important reasons cited by wine tourists were the educational and social aspects that were derived from spending time at the cellar door (Reid, 1990). Classifying the stages which wine tourists go through in terms of their travel experience informed the research of Mitchell (2004a) who devised a system consisting of four stages – that of "pre-visit", "travel-to", "onsite", "travel-from" and "post visit." Having the opportunity for direct contact at the cellar door with wine producers also served to amplify the educational

dimension of the wine production process (Mitchell & Hall, 2003b). Wine festivals have been noted by both Hall and Mitchell (2002a, b) and Fountain and Ryan (2016) as a key source for visitor motivation, while the health benefits derived from wine drinking have also been noted as being an important reason (Hall et al., 2000; Hall & Mitchell, 2002, a,b).

When viewed from the supply-side perspective it has been stated by Hall et al. (1997) that for wine producers having visitors onsite is sometimes described as a burden which can take producers away from time spent making their wines. When investigating wine producers who actively embraced wine tourism, Mitchell (2004) found that patterns of repeat visitation were occurring. In his research he discovered that cellar door purchases were made by nearly two-thirds (73 per cent) of the visitors that were surveyed (Mitchell, 2004). The most likely form of repeat visitation was from male visitors who lived locally and prided themselves as being highly knowledgeable about wine (Mitchell, 2004). Examining patterns of wine tourist visitation also has the potential to provide a valuable tool for the development of regional wine routes, along with providing opportunities for future growth and regional development (Bruwer, 2013; Dana, Granata, Lasch & Carnaby, 2013; Fountain, 2018; Mitchell & Hall, 2006).

Visitor attributes

Examining whether a common set of attributes underpin the consumer behaviour of visitors to New Zealand wineries has long been a topic of debate amongst wine tourism researchers (Beverland et al., 1998a, 1998b; Fountain, 2018; Hall, 1996; Mitchell, 2004; Mitchell & Hall, 2003a, 2006; Thompson & Fountain, 2017). Studies which take the supply-side perspective to develop insights into the relationship between wine tourism and consumer behaviour represent a growing stream of research (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1998; Mitchell & Hall, 2006). Measures utilised to detail such behaviour commonly focus on the motivations behind a visit to a particular region, the type of visit that was being undertaken, and whether or not the visit was a positive or negative experience (Mitchell & Hall, 2006).

The length of stay on-site, activities that were undertaken and whether this translates directly into the number of wine bottles purchased at the cellar door marks another important area of research (Mitchell, 2004). Longo (1999) and Machin (2000) examined the amount of activities available to visitors at New Zealand wineries, and found that the most popular pursuit was unsurprisingly wine tasting. Of interest in these two studies was that it was also found that visitors were interested in partaking in tours of a vineyard if offered (Longo, 1999; Machin, 2000). This finding is also consistent with the work of Mitchell (2004) who found that although 93 per cent of visitors that he surveyed participated in wine tasting at the cellar door, only nine per cent of these visitors bothered to go on a winery tour as well.

The dimensions of service quality that visitors experience is a key catalyst for choosing which winery to visit (Fountain, 2018; Longo, 1999). Friendly, personalised service has been found to rate as being an important drawcard (Fountain, 2018; Fountain & Thompson, 2017; Johnson, 1998; Longo, 1999; Mitchell, 2004). Hall's (1996) aforementioned tripartite typology has also been incorporated into previous wine tourism research (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1998) in order to provide a categorisation of who is participating in wine tourism within the New Zealand industry context.

Introducing visitors to wine brands that they may not be aware of or have ever considered purchasing is one of the fundamental functions of wine tourism (Mitchell, 2004). This educational aspect of the winery experience could also be used to not only encourage repeat winery visitation, but also to foster brand loyalty (Mitchell, 2004). The stages of purchase behaviour amongst different market segments has been found to be different at the stages of pre-visit, during the visit itself, and at the post-visit stage (Mitchell, 2004). However, there is the need for further research in this area. Mitchell et al. (2006, p. 323) argue that whether a winery visit is a catalyst for brand loyalty, or simply represents the mere reinforcement of the

behaviours and perceptions of existing customers who are already familiar with the wineries concerned needs a greater degree of investigation.

3.5. Environmental issues within the New Zealand wine industry

Issues surrounding biosecurity and sustainability have been noted in Chapter 2 of this thesis as increasing in importance globally (Hall, 2003, 2005, 2006; Hall & Mitchell, 2008; Mitchell & Hall, 2006; Hall et al., 2000), and from the supply-side perspective this has created a situation within the New Zealand wine industry where innovative responses are required. Literature which notes the variety of industry responses towards supply-side issues in the areas of sustainability, biosecurity and innovation are highlighted in the following sections.

Sustainability

The literature which highlights New Zealand winegrowers' attitudes towards sustainable winegrowing practices is examined through a variety of perspectives. Firstly, this thesis looks at New Zealand consumer responses towards sustainability. Secondly, the variety of initiatives which provide governance for sustainable winegrowing within the context of the New Zealand wine industry are investigated. Thirdly, the adoption of these initiatives is viewed from the stakeholder perspective, while the fourth and final section looks at how sustainable winegrowing practices have the potential to provide competitive advantage for the New Zealand wine industry.

Consumer Responses to Sustainable Winegrowing

Persuading growers to switch to sustainable winegrowing methods can require an assurance that there is something tangible to be gained in terms of the quality of wine, viability of the growing regime, and/or economic return. If this idea of tangibility is considered within the context of consumer perception towards sustainable winegrowing there is relatively little literature to provide wine producers with evidence of the economic value of sustainable

practices with respect to increased returns. A New Zealand based study by Forbes, Cohen, Wratten and Fountain (2009) reported that while consumers supported the concept of sustainable winemaking, they had little knowledge of what exactly was involved in the production processes involved that gave the particular wine brands environmentally based favourability.

Some authors have argued that strong environmental stewardship is necessary on the part of producers if the concept of sustainable wine production is going to be accepted and acted upon by wine consumers in their purchasing (Berghoff & Dodds, 2013). Forbes et al. (2009, p. 15) argue that “competitive advantage can only be gained in the marketplace if companies tell their consumers’ about their environmental focus” and that greater emphasis should be placed on the labelling of wine products to reinforce the fact that sustainable wine production methods have been used to create the end product. Nevertheless, the communication of positive environmental attributes of sustainable wine products is an area where there appears to be a disconnect between the desire of firms to be seen to be taking a proactive approach towards sustainability and the need for the end consumer to be able to access the appropriate information regarding what defines quality eco-certification at the point of purchase (Delmas & Grant, 2014; Forbes et al., 2009).

Sustainable Winegrowing Initiatives in New Zealand

The evolution of industry focused initiatives to promote sustainable winegrowing within the New Zealand wine industry on a systemic basis began in 1995 with the development of the Sustainable Winegrowing New Zealand (SWNZ) organisation (New Zealand Winegrowers, 2018a). The SWNZ scheme was first introduced commercially in 1997 with the expectation that it would be adopted by winegrowers from all grape growing regions (New Zealand

Winegrowers, 2018a), and coupled with the introduction of winery standards in 2002 (New Zealand Winegrowers, 2018a) aimed to underline an industry-wide commitment to sustainable production practices and techniques. The goal of this initiative was initially to have full participation in the scheme by all New Zealand winegrowers by 2012, and steps to ensure this were taken by making SWNZ membership mandatory for all wineries if they wish to take part in trade shows and export their products under the Wine New Zealand banner (New Zealand Winegrowers, 2018a). Enforcement is also undertaken through external auditing of sustainable practices by SWNZ appointed agents (New Zealand Winegrowers, 2018a). However, the goal set in 2012 of 100 per cent participation from New Zealand based winegrowers was not met (see Table 3.6).

Table 3.6: Membership of SWNZ

	2004	2005	2006	2007	2008	2009	2010	2015
Vineyards	403	431	432	457	683	1244	n/a	1918
Number of wineries	463	516	530	543	585	643	672	673
SWNZ Wineries	30	51	53	59	77	135	190	254
% membership	6.5%	9.9%	10%	10.9%	13.2%	21%	28%	37.7%

Source: New Zealand Winegrowers (2016).

The adoption of sustainable winegrowing strategies in the New Zealand wine industry

Designed to provide a best practice model by which New Zealand wineries can benchmark their environmental practices (New Zealand Winegrowers, 2018a), the manifesto of SWNZ also aims for a higher degree of quality control during all stages of wine production that is designed to satisfy the demands for sustainable processes by consumers of New Zealand produced wine

(New Zealand Winegrowers, 2018a). The benefits to all members of the SWNZ scheme are enshrined by the following five core strategies:

1. A framework of efficient and economical viticultural and winemaking practices that encourage environmental stewardship.
2. A continuous improvement pathway, enabling organisations to constantly improve and fine tune their methods.
3. A knowledge transfer platform for keeping up-to-date with new technology, approaches, and application techniques.
4. An external audit structure based on adherence to recommendations and guidelines issued by the OIV (International Organisation of Vine and Wine), with integrity and rigour to exceed market expectations.
5. The opportunity to play a part in preserving New Zealand's unique environment while operating under an independently audited and well-respected sustainability framework.

(New Zealand Winegrowers, 2018a)

As membership of the SWNZ scheme is meant to be mandatory for all New Zealand wineries (New Zealand Winegrowers, 2018a), then applying such a framework in a standardised fashion to the New Zealand wine industry creates the potential for division should wineries reject the aims of the scheme. When consideration is given to the fact that the number of vineyards exceeds the number of grape growers, it is pertinent to note that by the year ending October 2015 only 254 wineries, representing 37.7 per cent of New Zealand wineries at the time (New Zealand Winegrowers, 2016) had actually become members of the sustainable wine growing scheme. Commitment to carbon-neutral wine exports remained the focus of only a few, high profile wineries (New Zealand Winegrowers, 2016), so based on this evidence alone it would

appear that there are some significant issues at play with adoption of sustainability practices. Issues surrounding the adoption of sustainable winegrowing are not only limited to physical wine production elements; but can also affect the brand positioning of wine products and important avenues of offshore promotion such as wine tour tourism are also affected.

Sustainability as a form of competitive advantage from the stakeholders' perspective

The adoption of sustainable practices has been recognised as key point of differentiation amongst wineries and wine regions (Dodds, Graci, Ko, & Walker, 2013; Flint & Golicic, 2009; Forbes & De Silva, 2012; Hall & Mitchell, 2008). For example, in a domestic market of almost five million people, the Zealand wine industry has become increasingly crowded with 558 wineries registered in *The Australian and New Zealand Wine Directory* in 2015 (Winetitles, 2015) as compared to 193 in 1995 (Hall, 1996). This industry growth means that it is even more important to stand out from competitors' offerings than ever before, and sustainable wine production plays an important role in providing a point of difference.

The way in which the end product reaches consumers has become important when considering environmental issues such as carbon emissions and food miles undertaken in the journey from the vineyard to final consumption (Kennedy, 2009). For example, in a domestic market of almost five million people the Zealand wine industry has become increasingly crowded with 558 wineries registered in *The Australian and New Zealand Wine Directory* in 2015 (Winetitles, 2015) as compared to 193 in 1995 (Hall, 1996).

Attracting wine tourism via the promotion of sustainable methods of viticultural production is another path which is being used to pursue competitive advantage; this pursuit, although undertaken in the interests of protecting the immediate environment, does not always marry

with the political and ecological realities of sustainability at a global scale (Hall, 2010). Therefore, to be truly sustainable wine growing needs to understand the environmental, social and economic effects of both its supply chain and its distribution channels. Nevertheless, the argument that employing sustainability practices can provide a form of competitive advantage for wineries and wine regions (Hall & Mitchell, 2008) has been disputed. For example, Sinha et al. (2010) argue that New Zealand wineries that are committed to an export orientation are more likely to adopt environmental practices, and that it is not institutional pressure that is forcing these organisations to modify their environmental practices. This suggests that environmental protection and conservation practices are potentially an area of some contention within the industry.

3.6 Biosecurity

Research into biosecurity is one area where there is a noticeable gap within New Zealand wine tourism research apart from studies by Hall (2003, 2005) and Christensen et al. (2004). Key themes that have emerged in relation to winery biosecurity and invasive species concern the level of awareness among businesses of potential biosecurity risks, the strategies that are in place to deal with any such occurrences, and where wineries are able to turn in order to gain the information that they need to deal with and contain any problems that could arise as a result of a breach of biosecurity protocols (Hall, 2003, 2005). For example, New Zealand Winegrowers have developed a biosecurity strategy and entered a Government Industry Agreement (GIA) with the New Zealand Government to share the cost of responding to biosecurity incursions, with the Board of New Zealand Winegrowers recommending the establishment of a dedicated biosecurity levy on winegrowers (New Zealand Winegrowers, 2018d). This is even though “this levy would normally be set at zero, and would only ever impose a cost on members if funds are needed for a major biosecurity response” (New Zealand

Winegrowers, 2016, p. 5). The approach of New Zealand Winegrowers illustrates that much of the concern of winegrowers with biosecurity is at a national border, rather than at the level of a vineyard, and with a focus more on rootstock and grafting standards than the movement of people (New Zealand Winegrowers, 2016).

Awareness of biosecurity risks at New Zealand wineries

Although an awareness of the same risks have been recognised as being important by some industry stakeholders within the wine industry (Baird, 2012; Hall, 2003, 2005; Christensen et al., 2004) there is a limited awareness of biosecurity risks at the level of the wine tourist who is coming into the country from a foreign destination (Hall, 2003). The introduction of biosecurity control strategies at vineyards and wineries in New Zealand has been somewhat limited (Baird, 2012; Christensen et al., 2004) with SWNZ only including information regarding their biosecurity policies on their website from 2017 onwards (New Zealand Winegrowers, 2018b). The Board of New Zealand Winegrowers has recommended the establishment of a dedicated biosecurity levy on winegrowers (New Zealand Winegrowers, 2018d). This is even though “this levy would normally be set at zero, and would only ever impose a cost on members if funds are needed for a major biosecurity response” (New Zealand Winegrowers, 2016, p. 5).

Strategies designed to deal with biosecurity threats

As the number of international wine tourists coming to New Zealand increases, so too does the risk of potential biosecurity risks. The *New Zealand Winegrowers Biosecurity Strategy* (New Zealand Winegrowers, 2018b, p.2) states the following:

The New Zealand wine industry has developed with relatively little impact from unwanted pests and diseases, in part due to its geographic isolation. Biosecurity is a high priority because as New Zealand is becoming increasingly connected in a global world. The number of potential pathways, and the amount of potential risk goods on these pathways will increase.

An array of themes has emerged within the area of wine tourism and biosecurity. These themes examine the level of awareness regarding potential biosecurity risks, strategies that wineries have in place to deal with outbreaks, and how wineries can access information required in order to deal with a breach of biosecurity protocols. Not only is the aforementioned lack of awareness surrounding biosecurity risks amongst wine tourists arriving into New Zealand problematic (Hall, 2003), but there needs to be an awareness of these same biosecurity risks amongst those at the stakeholder level within the New Zealand wine industry (Hall, 2003, 2005). This has also been noted as being a very important consideration in order to encourage a proactive approach rather than a reactive approach towards biosecurity threats (Hall, 2005).

Previous iterations of the New Zealand National Wineries survey have uncovered some potentially alarming evidence with regards to the attitudes of New Zealand winegrowers towards biosecurity. Questions regarding biosecurity were first posed in the 2003 New Zealand National Wineries' Survey where Christensen et al. (2004) found that only 11.9 per cent of respondents had an active biosecurity strategy in place. The 2010 iteration of the survey then revisited this topic, and found that 22.3 per cent of respondents now believed that the current biosecurity measures they employed were adequate, while over three quarters of respondents (77.7 per cent) still believed that the biosecurity measures which they employed were inadequate for dealing with any potential biosecurity threats that might be brought onsite by

wine tourists (Baird, 2012). These figures highlight the existence of a knowledge gap concerning the potential dangers presented by biosecurity threats, and that information sharing by those responsible for the governance of biosecurity protocols within the New Zealand wine industry has been woefully inadequate (Hall, 2003; Renton et al., 2009).

Availability of information regarding biosecurity threats for New Zealand wineries

Renton et al. (2009) suggest that there is a need to incorporate biosecurity elements into the framework of sustainability programmes in New Zealand in order to protect vineyards from disease. The transmission of vectors such as Pierce's disease and a subsequent outbreak could potentially destroy these vineyards, so a need for proactive protective measures clearly exists (Hall, 2003, 2005; Renton et al., 2009). Channels which are used for the dissemination of biosecurity information are critical for creating a network of knowledge sharing amongst wineries (Hall, 2010). Governance mechanisms which facilitate the sharing of knowledge and preventative strategies regarding biosecurity risks have been noted by Hall (2010) as being highly complex. Barriers to information sharing by wineries have been cited by Jay and Morad (2006) as being a direct result of prior socioeconomic experiences that New Zealand wine producers have had of the benefits from taking a proactive stance towards industry-wide issues of importance. These past experiences have also become obstacles in terms of informing effective public policy regarding biosecurity issues, thereby hampering the New Zealand wine industry's responsiveness towards biosecurity threats.

The relationship between biosecurity and sustainability in the New Zealand wine industry

The first investigation into the relationship between biosecurity and sustainable wine tourism in New Zealand was undertaken by Hall (2003). Key themes that have emerged within the area of wine tourism in relation to biosecurity and invasive species concern the level of awareness of potential biosecurity risks, what strategies are in place to deal with any such occurrences,

and where wineries are able to turn in order to gain the information required to deal with and contain any problems that could potentially arise as a result of a breach of biosecurity protocols.

It has been noted that there is a limited awareness of biosecurity risks at the level of the wine tourist who is coming into the country from a foreign destination (Hall 2003), while an awareness of the same risks have been recognised as being important by those at who are at the stakeholder level within the wine industry (Wilkins & Hall, 2001; Hall, 2005). However, this has tended to be at a perceived as a national level issue rather than one to be dealt with at the vineyard scale. It is only in recent years that biosecurity has become part of the SWNZ scheme.

Whilst it is good that biosecurity is finally being recognised as part of New Zealand Winegrowers' overall strategy there are still significant shortcomings in terms of the awareness amongst winegrowers as to the danger which biosecurity threats pose for the New Zealand wine industry (Baird, 2012). This points towards the need for greater levels of both education and communication within the New Zealand wine industry in order to address this issue.

3.7 Innovation

The relationship between tourism and innovation

Innovation represents for wine tourism an area which could potentially breathe new life into the New Zealand wine industry as it faces turbulent economic times (New Zealand Winegrowers, 2018a). However, the very nature of the OECD et al. (2005) definition of innovation (see Chapter 2) suggests a potential dilemma for New Zealand wine tourism. On one hand, you have the approach taken within the SWNZ scheme whereby the sustainable processes methods and products produced must meet a pre-determined criteria dictated by this organisation (New Zealand Winegrowers, 2018a), while on the other hand there are many wineries which pre-date the introduction of SWNZ in 1995 (New Zealand Winegrowers,

2018a), and arguably have already created their own innovations within the context of this definition without external intervention. Tourism and innovation policies in New Zealand appear to lack a significant form of inter-relationship as noted by Hall (2009, p. 15) who points out that “it is possible that one of the reasons for the lack of recognition of tourism in innovation policy is that it is perceived as an industry that is not particularly innovative”. Where there was a connection between tourism and innovation in New Zealand, strong institutional support on a local level was seen to be to the fore (Hall, 2009).

Measuring innovation within the New Zealand wine industry context

The New Zealand wine industry is at a formative point when it comes to research into the relationship between innovation, sustainable wine practices and wine tourism. Very few prior studies measure New Zealand wine industry responses to innovation; Cullen, Forbes and Grout (2013) are the exception through their research into the Greening Waipara scheme which is based in the Canterbury region of New Zealand. However, the 32 New Zealand vineyards involved in this particular study were not examined through the application of the OECD et al. (2005) framework that was used in this thesis. Applying innovation measures as set out by the OECD et al. (2005) to the New Zealand wine industry provides an opportunity to benchmark attitudes towards innovation within the context of past innovation studies conducted within the New Zealand agricultural sector. Innovations can signal significant changes to existing strategies, structures and routines (Statistics New Zealand, 2013), and as such serve to grow the existing knowledge available for those involved in the supply-side of the industry (Cullen, Forbes & Grout, 2013; Hall, 2009; Hall & Williams, 2008).

3.8 Cooperative Arrangements

Hall et al. (2003) state that the intensification of the branding of local food identities and the growth of sustainable food systems echo the growth which has occurred globally in terms of the dynamic which exists between wine consumption and tourism. For the purposes of this thesis, the definition of co-operative arrangements are those which “mean actively participating with another organisation or individual, in activities for the purpose of innovation” (Statistics New Zealand, 2013). Previous New Zealand research into the importance of wine tourism networks and clusters emphasise that networks are a vital ingredient in ensuring the ongoing survival of the wine industry (Dana & Winstone, 2008; Dana et al., 2013, 2016; Hall & Johnson, 1997; Hall et al., 2000; Woodfield & Husted, 2017). Uniting vineyards towards a common goal, such as collaborating on projects involving wine trails and attractions can help to bring together what was once “separate industries with separate business foci” (Hall et al., 2000, p. 208). This can also help aid differentiation by allowing wine regions to capitalise on their unique attributes in order to attract wine tourists. Alonso (2010) notes that linkages between industries involved in agriculture and tourism serve to provide important sources of regional economic prosperity, while Thomas (2005) argues that the creation of these economic conditions is of paramount importance if other alternative attractions which could attract long-term investment do not already exist.

Business arrangements which are built on a foundation of cooperation have been found to enhance prosperity by encouraging the sharing of knowledge and the adoption of innovative business methods (Hall, 2005a). As the knowledge economy becomes increasingly important for the New Zealand wine industry, Hall (2005a, p. 153) has stated that it is “vital that regions, as much as individual firms, attract, retain, and develop the best of their people”. Cooperative arrangements can allow regions to really emphasise their unique points of difference; Mitchell (2004) illustrates this through the examples of how the New Zealand wine industry has adopted

European traditions such as wine trails and routes. Other examples include Hall's (2004) assertion that forms of social capital and intangible capital have been instrumental in the formation of wine and food tourism clusters around New Zealand. The adoptions of innovations such as wine trails within the New Zealand wine industry has also been a catalyst for more widespread regional network development (Hall et al., 2000). Collaboration between wine and food tourism networks within the New Zealand market have also allowed for new regionally-based product developments to occur, which in turn add value to existing offerings for wine and food tourists (Lewis, Byrom, & Grimmer, 2015; Mitchell & van der Linden, 2010).

The degree to which collaboration occurs amongst members of wine network clusters in the New Zealand winegrowing region of Waipara has been shown to help negate competition which would have usually occurred between these wineries (Dana & Winstone, 2008; Dana et al., 2013, 2016). However, there are no guarantees that wineries will participate in cooperative arrangements. Schreiber's (2004) research into the Central Otago wine region of New Zealand discovered several challenges which seemed to impede the development of cooperative arrangements between regional tourism based business and wineries; challenges to the formation of such arrangements included political issues, poor communication, and a lack of defined boundaries surrounding the various wine and tourism related sub-sectors which exist within the region (Schreiber, 2004). As a result of these problems the speed at which a cohesive wine tourism network was able to be created was affected (Hall & Mitchell, 2004; Schreiber, 2004).

It has been suggested that research is needed into how the actions of the New Zealand government in terms of regulatory measures and policies impact on the cooperation amongst New Zealand wine clusters and networks (Hall & Mitchell, 2004). Engaging with Old World wine producers in countries such as Italy and Greece could also be useful in order to examine how network cooperation can be transformed into a form of competitive advantage through the

sharing of both knowledge and winemaking techniques (Hall, 2005a) could serve as a potential inspiration for current New Zealand winegrowers. Table 3.7 provides a summary of results from the 1997, 2003 and 2010 surveys that was collected on the topic of cooperation and alliances.

3.9 Alliances

The role of alliances within the New Zealand wine industry has been cited as being a vital factor in facilitating improved flows of information within wine networks at the regional level (Dana & Winstone, 2008; Dana et al., 2013, 2016; Hall & Johnson, 1997; Woodfield & Husted, 2017; Woodfield & Nel, 2018). These wineries are linked by the commonality of wanting to provide tourists with winery experiences which are memorable (Bruwer, 2013). The growth of commercial wine tours which take in several wineries within one journey alongside the development of winery-related cycle trails which provide a unique point of difference for regions in New Zealand such as Central Otago has been instrumental in the achievement of this (Schreiber, 2004). Hall and Johnson (1997) state that alliances represent an important mode of information sharing for New Zealand wineries as the information exchange process has not always been efficient and lacked a standardised approach. This is an important aspect to note as the adoption of sustainable winegrowing practices relies heavily on the quality of information provided to all parties concerned; failure to provide wine producers with enough information can lead to a lack of uptake of these measures due to confusion around what the methods are, alongside how they are to be assessed.

Table 3.7: Summary of results from 1997, 2003 and 2010 New Zealand surveys for Networks and Cooperation

Year	Author	Results
1997	Hall and Johnson	<ul style="list-style-type: none"> - Producer alliances with tourism organisations were reported as being lower than those with wine or grape organisations. - Regional business organisations such as the Chambers of Commerce and Business Development Boards were viewed as providing valuable opportunities for regional business promotion and business networking. A higher level of involvement with Business Development Boards was reported by wineries than with the Chamber of Commerce. - One-fifth of respondents were members of a regional tourism organisation, and several wineries reported in being engaged in cooperative promotional activities. - The wine industry in 1997 appears to view wine tourism as a regional and not a national issue, yet at a regional level regional tourism organisations do not have a visible presence in the wine industry. - A high level of regional support was noted as being required to develop future wine tourism strategies. However, not all wineries appear to be interested in participating (This is a very interesting point if you consider this in the context of the position of some New Zealand winery operators regarding the SWNZ scheme expressed in both the 2015 and 2010 editions of this survey). - The primary responsibility for wine tourism promotion was viewed as being with the wine industry itself.
2003	Christensen et al.	<ul style="list-style-type: none"> - From the limited information available from the 2003 survey in this area, the primary responsibility for wine tourism promotion was viewed as being with regional tourism organisations.
2010	Baird	<ul style="list-style-type: none"> - Joint marketing or distribution was main activity undertaken by wineries who engaged in cooperative arrangements. - Sharing costs was viewed as the most important reason for wineries to cooperate (32 per cent). - The main organisations that New Zealand wineries reported having relationships with were Visitor Information Centres (10.7 per cent) followed by Business Development Boards (9.7 per cent) and Regional Tourism Organisations (7.8 per cent). - The primary responsibility for wine tourism promotion was viewed as being with regional tourism organisations, followed by individual wineries in second place and industry associations in third position.

3.10 Tourism and Marketing

Wine and food festivals

Although they provide an increasingly key element in the role of wine tourism, research into wine and food festivals within New Zealand based research remains very much in its infancy when compared to overseas research in this area (Baird, 2012; Beverland et al., 2001; Bruwer, 2013; Christensen et al., 2004; Hall & Johnson, 1998; Hall & Mitchell, 2001a, 2001 b, 2004, 2005a, 2005b; Hall & Sharples, 2008; Johnson, 1997; Mitchell, 2002, 2004). The key drivers of motivation to attend the many wine and food festivals throughout New Zealand relate closely to the spectacular scenery, accessibility of the wineries themselves, and the wide spectrum of festival themes offered (Beverland et al., 2001; Bruwer, 2013; Fountain & Ryan, 2016; Hall et al., 2000; Hall et al., 2003; Hall & Sharples, 2008; Mitchell, 2004). The reasons for festival attendance have informed the research of Hall and Mitchell (2004, 2008). The crucial role that community wine festivals play in terms of attracting visitors, helping to promote the region concerned and also aiding the promotion of localised wine brands cannot be underestimated (Hall & Mitchell, 2008).

Within New Zealand there are over fifty known wine festivals and wine industry-focused symposiums which are held annually (Winetitles, 2015). Profiling exactly who is attending New Zealand wine and food festivals has been important in ensuring that these festivals continue to meet the expectations of event participants (Hall and Mitchell, 2004; Mitchell & van der Linden, 2010). Previous National Winery Surveys (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997) examined the number of wine festivals that New Zealand wine producers were involved in, and the resulting longitudinal time series captured through the

administering of these surveys has provided insight into the degree of New Zealand based wine festival and industry symposium involvement.

Regional tourism promotion

Examining the relationship between regional development and wine tourism represents a growth area in terms of research by New Zealand based researchers (Hall 1996, 2002, 2003a, 2004, 2005a; Hall et al., 2000; Hall & Mitchell, 2000, 2002a). The links between the social and economic dimensions that drive regional wine and destination promotion have been investigated by Hall (1996). These links were also seen to be critical for the rejuvenation and ongoing conservation of rural areas which may have previously been in economic decline (Hall, 1996; Hall et al., 2000). Economic growth provided by the employment opportunities brought about by wine tourism coupled with the revenue generated through the sales of wine-related merchandise are key to regional wine tourism promotion and attracting ongoing investment (Hall et al., 2000).

The lack of standardisation within the context of regional branding present a challenge for New Zealand wineries; in the first iteration of the New Zealand National Wineries Survey, Hall and Johnson (1997) found that less than a third of the wineries surveyed had access to merchandise or other promotional where regional branding was a feature. Exhibitions, conferences and trade shows where New Zealand wine is the primary focus have been proven to be effective in terms of their impact as a promotional tool for wine tourism (Mitchell, 2004). The influence that these events can have in influencing subsequent consumer behaviour and visitation (Mitchell et al., 2004) should not be underestimated in terms of regional wine tourism promotion. Table 3.8

details a summary of the key findings regarding tourism marketing from the 1997, 2003 and 2010 longitudinal time series of New Zealand National Winery Surveys.

Table 3.8: Summary of results from 1997, 2003 and 2010 surveys for Tourism and Marketing

Year	Author	Results
1997	Hall and Johnson	<ul style="list-style-type: none"> -Tourists are valuable and tourism provides significant marketing opportunities - 72.9 per cent of winery owners agree that time spent with their visitors is valuable. 21.7 per cent of respondents agreed that tourism did not attract the kind of visitors they wanted to their winery. - Most producers (63 per cent) had attended no more than one wine festival in 1997. One third (35 per cent) attended between two and six festivals, while very few (2 per cent) attended more than six festivals.
2003	Christensen et al.	<ul style="list-style-type: none"> - Wine tourism is seen as important in terms of enhancing product/brand awareness, helping to differentiate one wineries wine from another, helping to develop mail order sales and (2003 survey only), helping to educate customers. - Tourists are valuable - there is an increase of 13.5 percentage points in those either agreeing or strongly agreeing with this statement. - There is an increase in the recognition that tourism provides significant marketing opportunities. - There is an increase in the belief that the positives outweigh the negatives when it comes to wine tourism. - The category of ‘Tourism does not attract the kind of visitors I want to my winery’ in 2003 fell 8.4 percentage points to 13.3 per cent. - Wine tourism was looked on more positively than it was in 1997.
2010	Baird & Hall	<ul style="list-style-type: none"> - Cellar door visitors were reported by winery owners as not buying as much wine as in previous years. - The belief that the positives outweigh the negatives when it comes to wine tourism continued to increase however. This was seen particularly in terms of wine tourism aiding wineries in terms of differentiating their products from their competitors’ products. - There was some uncertainty over whether the tourism industry had much to offer the wine industry overall though. - More regional marketing and support from SWNZ in terms of promoting sustainability was cited as being needed.

3.10 Chapter Summary

There are a number of significant knowledge gaps that this chapter has identified which exist within New Zealand wine tourism research. Being able to define the core destination attributes that wine tourists associate with memorable winery experiences has the potential to be able to provide added value in terms of the business strategies employed by New Zealand wineries to engage wine tourists. Other opportunities where research is clearly needed involves ascertaining the motivating factors for winery visitation by surveying wine tourists at the cellar door. The importance of further research within the areas of sustainability, biosecurity and innovation which explores the relationship of wine tourism with each of these three areas is also critical in order to capture changes in supply-side attitudes towards these important issues.

The level of wine tourism promotion which individual regions commit to is an important facet for driving the demand for winery visitation within the New Zealand wine industry. Although the 2015 iteration of the New Zealand National Winery Survey aimed to provide a snapshot of the current state of play within the New Zealand wine industry and add depth to the existing survey time series, it is also important to note that there have in the past been gaps in some of the regional coverage, particularly from wineries in the Gisborne region. With this noted, this thesis will now move to examine the mixed methods approach utilised in this study in Chapter 4.

Chapter 4

Methods

4.1 Chapter introduction

A mixed-methods approach has been adopted to facilitate the collection of data for this thesis. This chapter focuses on discussing the stages of research utilised in this study by examining the survey design that was employed. It also outlines how the primary data was obtained from the 558 winegrowers located within New Zealand (Winetitles, 2015), 125 winegrowers located in Tasmania (Winetitles, 2015) and 241 winegrowers located in Western Australia (Winetitles, 2015). The procedures that were utilised and the ethical considerations that were required to be taken into account are also examined.

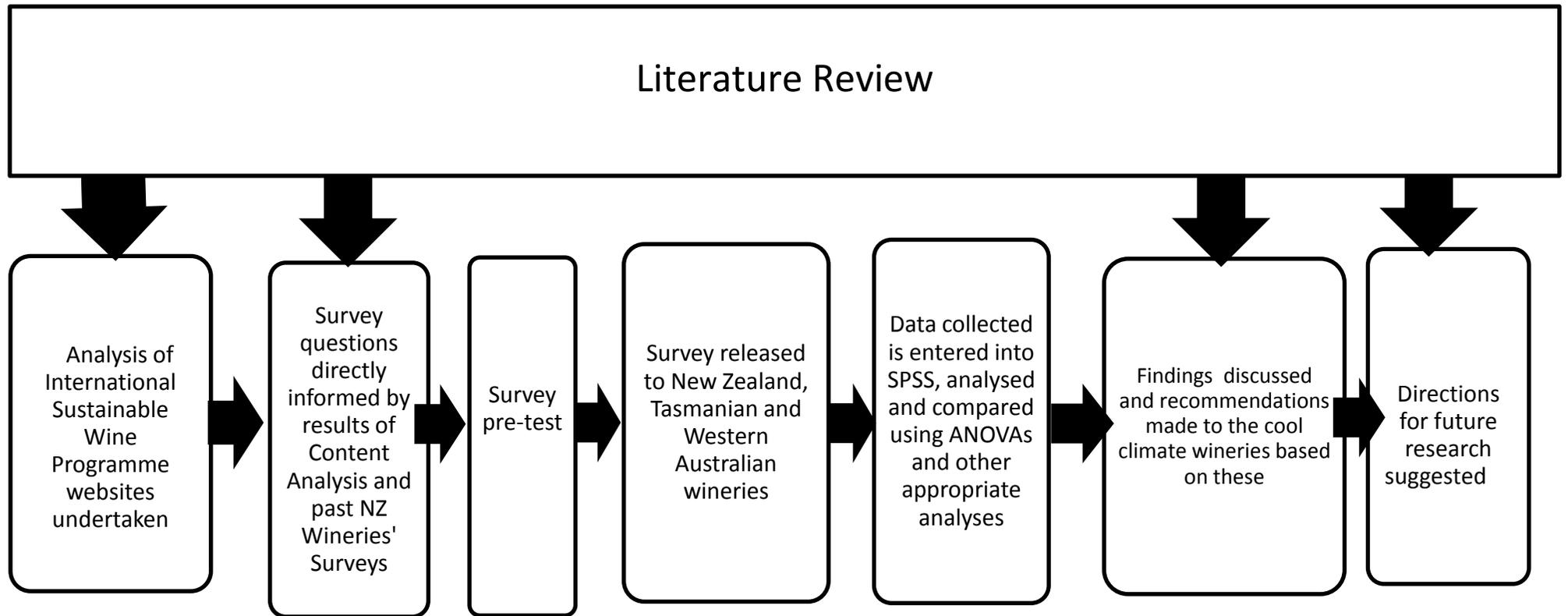
4.2 Stages of this thesis in relation to the method utilised

This thesis involved seven stages of research (Figure 4.1) excluding the literature review. The first stage of this study consisted of a content analysis conducted of international sustainable winegrowing program websites. The results obtained from this analysis, together with an assessment of the relevant literature, then helped the formulation of questions for the second stage of this study in the form of the 2015 New Zealand and 2016 Tasmanian and West Australian Wineries Survey. The purpose of these surveys was to obtain information about wineries' attitudes towards sustainable winegrowing practices in the cool climate winegrowing regions of New Zealand, Tasmania and Western Australia. Prior to the surveys being undertaken, a third stage consisting of a pre-test was conducted in order to mitigate any errors

or potential issues that might arise before the official release of the survey. Once the pre-test stage was complete, the fourth stage of the actual release of the surveys was conducted. This occurred in two phases; the first phase saw the New Zealand survey released in September 2015. The second phase was the release of a survey in Tasmania and Western Australia in October 2016. The reason for the phasing of the release of this survey was to take into account seasonal variances in activity amongst vineyards and also the availability of the kind support of Associate Professor Haywantee Ramkissoon of Curtin University, Western Australia, to collect responses from the Australian wineries. Conducting surveys at these times also ensured that the survey response rate would not be affected by approaching wineries to do the survey during their peak periods of business for the year (NZ Winegrowers, 2016; Wine Australia, 2018).

Results obtained from the surveys were entered into SPSS in the fifth stage of the thesis research process; this then created the platform for the analysis of the data. The findings then informed the sixth stage which included the subsequent discussion and the seventh stage which involved the identification of possible directions for future research and the overall conclusions derived from this thesis.

Figure 4.1. Stages of this thesis and the method used



Longitudinal Analysis

The 2015 New Zealand based edition of the National Wineries Survey was the fourth such survey of its type to be undertaken (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997). This meant that this thesis further extended a longitudinal time series survey of New Zealand wine tourism (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997) by focusing not only on the adoption of sustainable winegrowing practices within the current New Zealand wine industry context, but also through the utilisation of international data derived from Tasmanian and Western Australian wineries which allowed for international comparisons to be made. To the authors' knowledge this is the first New Zealand or international study to provide such an extensive longitudinal analysis of wine tourism at both a national and an international scale as well as attempt to provide an international comparison between regions, and this provides a valuable contribution to the existing body of knowledge in this area.

Although many researchers emphasise the value of longitudinal research (e.g. Alonso & Liu, 2012; Burgess et al., 2009, Getz, 1994; Taylor, 2006), it is invariably not conducted. Therefore, being able to compare the findings of this study with previous New Zealand National Wineries' Surveys (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997) is of real value for gaining an understanding of the changing dimensions of sustainable winegrowing at not just purely a national level, but within an international context.

Comparative country selection

As noted in Chapter 3 New Zealand already has a substantial legacy of research on wine tourism and wine growing that this thesis has sought to extend. However, in seeking to provide a comparative dimension for New Zealand, consideration was given as to the selection of wine

regions that had similar environmental and sustainability issues to those faced by New Zealand winegrowers. As a result the regions selected for this research to compare to the New Zealand survey results were the Australian winegrowing regions of Tasmania and South Western Australia. The rationale behind this selection was that all are regarded as cool climate winegrowing regions, and this consistency in environmental factors as well as many of the wine varieties that are grown would aid in ensuring that growing conditions for all the wine producers surveyed were reasonably consistent (de Blij, 1985; Jackson & Schuster, 1987). Furthermore, both Australian regions have focussed strongly on wine tourism while they also promote sustainable winegrowing practices of a voluntary nature. As noted in Chapter 3 in this thesis, New Zealand is the only country in the world with a compulsory sustainable wine growing scheme. The importance of examining cool climate winegrowing regions from a sustainability perspective is highlighted by Jones and Schultz (2016, p.52) in the following statement:

Climate modelling efforts show that continued warming into the future is highly likely. Across winegrape regions globally model results point to a range of 1-4°C warming by 2050-2070, with higher warming rates in the Northern Hemisphere vs the Southern Hemisphere. However, many regions over the past 10-20 years have already seen conditions that were expected to become reality on average by 2050. Furthermore, climate models are projecting continued increases in climate variability, bringing further risk on top of the average changes in climate.

Based on this statement it is clear that a proactive rather than a reactive approach is required to address the pace at which climate change is affecting the wine industry. In order to address this issue from both an internal and external governance perspective Figures 4.2 and 4.3 show the synthesis of the literature search involved this thesis. The two dimensions of physical versus internal business response to sustainable wine growing (Figure 4.2) were initially examined

before the synthesis moved to examine the three dimensions of sustainable wine production in terms of practices, internal business attitudes, and external governance pressures (Figure 4.3).

Figure 4.2. The two dimensions of physical vs. internal business response to sustainable wine growing

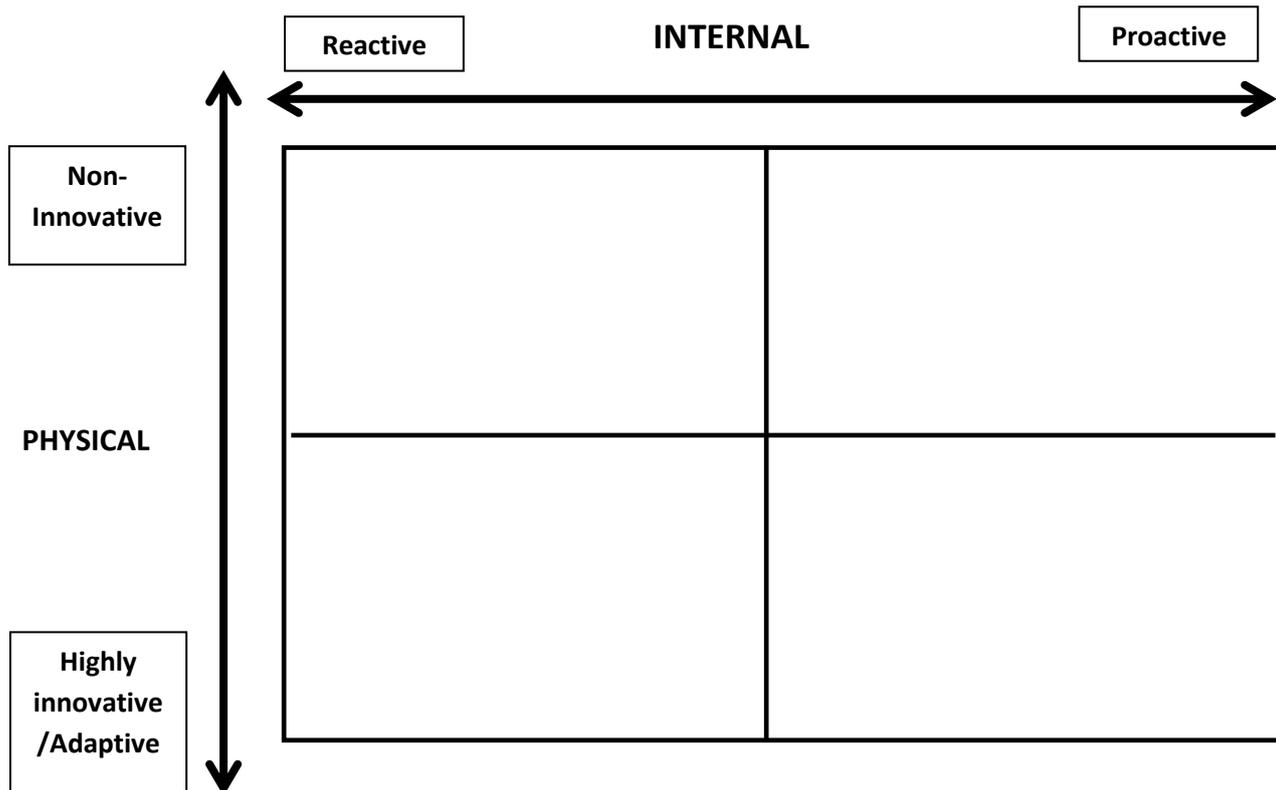
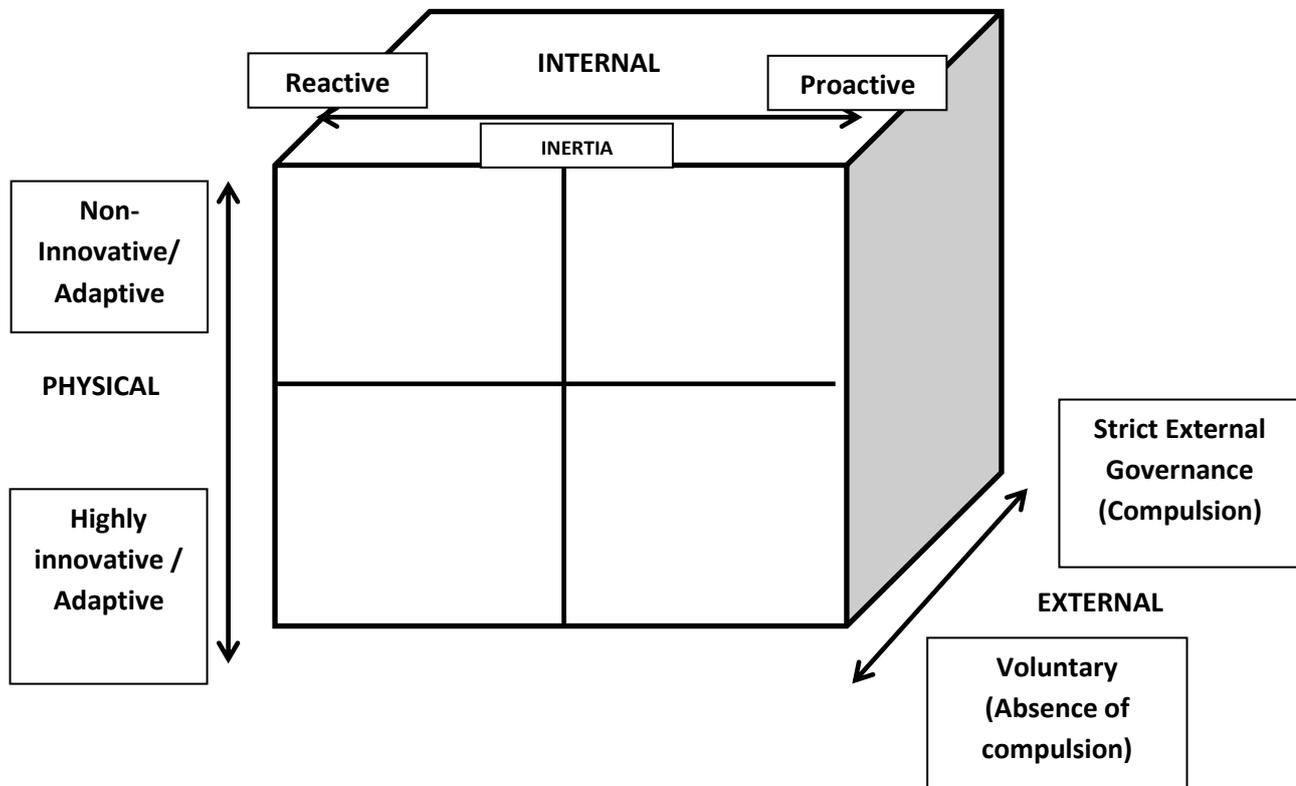


Figure 4.3. The three dimensions of sustainable wine production: Practices, internal business attitudes, and external governance pressures



Positioning of current study in relation to previous studies in this topic area

Attitudes towards sustainable winegrowing practices had been examined within the New Zealand wine industry by the 2010 New Zealand National Wineries Survey (Baird, 2012), whilst levels of innovation amongst wine producers in British Columbia had also been surveyed at the firm level by Doloreux and Lord-Tarte (2013). Galbreath et al. (2014) examined the understanding of climate change issues and their impacts amongst Tasmanian winegrowers, and also looked to see whether these issues served to drive innovation within the wine industry in the particular region (Galbreath et al., 2016). Consumer attitudes and acceptance of sustainable wine products have been the subject of research in South Africa (Heyns et al., 2014), whilst the firm-level perspective has also been applied to examining pro-environmental behaviours amongst wine producers (Hamann et al., 2015). Although these studies have

attempted to address these issues, there is still a gap which exists in terms of examining the attitudes towards sustainable winegrowing practices using a longitudinal and cross-national study; and more specifically, a study that also focuses on aspects such as governance, biosecurity, eco-labelling, and how climate change is influencing environmental innovation on an international level. These are all areas that this thesis aimed to address.

Content analysis

As a methodological approach, content analysis provides the means to facilitate the collection of data for quantitative research studies in both an objective and systematic and replicable manner (Berelson, 1952; Krippendorff, 2004). Content analysis also has the ability to break down information into specific content categories which can then be coded accordingly (Krippendorff, 2004).

Several other key advantages are also provided through using this method. Content analysis is unobtrusive, unstructured, can cope with the demands of large sets of data and examines the focus of the communication itself whilst not engaging the individuals involved in the design of the communication (Krippendorff, 2004). When these advantages are viewed within the context of this thesis, the use of this method was extremely important as this enabled the collection of data from fifty-three international sustainable winegrowing websites currently in operation over the period of March, 2013 to August, 2015 with a focus purely on the messages that were being communicated based on the series of technical criteria that were applied (refer to Section 5.1.2 of this thesis for a full breakdown of these criteria).

The content analysis utilised in this thesis aimed to provide an additional foundation, together with the extant literature and previous research within this topic, for the development of questions posed in the cross-national survey element of this study. Before analysis of the programmes could begin, the development of a set of criteria was necessary in order to ascertain

whether all programmes were suitable for inclusion, or if any websites needed to be removed from the analysis. The criterion that was developed to guide this process will now be examined.

4.3 Sample population

The sample population used in this study was derived from published guides that list the current wineries registered within the three regions that provide the foci for this thesis. Details for both New Zealand and Tasmanian and Western Australian wineries were obtained using census sampling via publicly available listings published in *The 2015 Australian and New Zealand Wine Industry Directory* (Winetitles, 2015). As discussed below the information in the directory allowed for every winery from the three wine regions listed in the directory to be sent a survey.

4.4 Survey Design

The survey used in this thesis (refer to Appendices A-C for the individualised country versions of this survey) was based on the template of the three previous New Zealand National Wineries' Surveys (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997). Copies of the 2003 and 2010 survey can be viewed by referring to Appendices D and E. Unfortunately, a physical copy of the 1997 survey could not be obtained, so was unable to be included with this study. The initial survey questions (Hall & Johnson, 1997) were created by the researchers involved, and also utilised questions posed in previous New Zealand (e.g., Reid, 1990), and international studies (e.g., Golledge & Maddern, 1994; Dodd & Bigotte, 1995; Maddern & Golledge, 1996; Macionis, 1997). Previous survey-based studies which focus on sustainable winegrowing (Atkin et. al, 2011; Forbes & de Silva, 2012; Jones, 2012; Sinha & Akoorie, 2010) have been used to help modify the survey for the present study. When combined with the results of the content analysis this second step in the process helps ensure the creation of a robust set of

questions designed to provide an overview of the current situation regarding the adoption of sustainable winegrowing practices within the Australian and New Zealand wine industries.

The determination of wine producers' attitudes towards sustainable practices was the area in which the majority of new questions posed in this cross-cultural version of the survey occurred. These questions explored areas such as participants' commitment towards sustainable practices, whether such practices were viewed as being valuable as a potential source of competitive advantage, and the reasons behind why sustainable practices were initially employed by wineries if they had chosen to adopt them. If wineries had already utilised sustainable practices, they were asked whether they had chosen to increase the amount of sustainable practices that they had implemented over the two financial years prior to 2015 (New Zealand) and 2016 (Australia).

The 2015 and 2016 surveys were divided into seven main sections. The first two sections focused on winery and visitor profiles. This was then followed by sections dedicated to biosecurity and sustainability, before innovation within the local wine industry relevant to the particular country that was the focus of the survey was examined. The final section which focused on tourism and marketing then led into a set of questions that were designed to gather respondent contact information. Questions in the 2015 New Zealand survey were therefore similar to those asked in the 1997, 2003 and 2010 surveys with some modifications designed to gather updated information regarding biosecurity, innovation and sustainability issues, as well as the different regional characteristics for the Australian surveys. Further changes were also made based on the results of previous New Zealand (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1997; Hall et al., 2000; Mitchell & Hall, 2001a, 2001b) and international wine and wine tourism research (Atkin et. al, 2012; Dodd & Bigotte, 1995; Forbes & de Silva, 2012;

Gilinsky et al. 2015; Golledge & Maddern, 1994; Jones, 2012; Maddern & Golledge, 1996; Macionis, 1997; Sinha & Akoorie, 2010).

Exploration of the relationship between biosecurity and wine tourism in New Zealand was first undertaken by Hall (2003, 2005) and further augmented by the work of Baird (2012). Questions posed in the biosecurity component of the surveys used for this thesis were substantially based on the findings that these particular studies provided. Supply-side perspectives were gained through asking winemakers six questions. First, winemakers were asked whether their vineyard had biosecurity measures in place with respect to wine tourists (Baird, 2012; Hall, 2003, 2005). Second, it was ascertained as to whether wine tourists were allowed to wander freely amongst the vines when visiting. Governance issues which were initially highlighted by Hall (2003) were then addressed by asking winemakers whether or not they believed that their winery currently received adequate information regarding biosecurity threats from Government agencies. Industry readiness to deal with biosecurity threats was also gauged by asking respondents whether they felt that their winery currently has an effective strategy in place to deal with potential biosecurity threats. The incorporation of a biosecurity component as part of sustainability initiatives was an important area within this survey due to the lack of research which presently exists within this area in terms of biosecurity threats, including from tourism.

A series of completely new questions featured in the surveys used for this thesis asked participants a series of questions related to sustainability practices. The first set of questions in this section employed a five point Likert scale (1= Strongly disagree, 5= Strongly agree) and asked how important participants believed sustainability practices were for their local wine industry, and whether any sustainability practices utilised onsite provided their winery with an important source of competitive advantage (Atkin et al., 2011; Carmichael & Senese, 2012;

Casini et al., 2010; Flint & Golicic, 2009; Grimstead, 2011). Participants were then asked what the reasons were for the sustainability practices that they had chosen to employ. Nine options were presented; to increase revenue, to reduce costs, to increase market share, to reduce energy consumption or to reduce environmental impact (OECD and Statistical Office of European Communities [OECD], 2005). Also included in the options listed were to establish and/or exploit market opportunities, to improve productivity or to attract visitors to their particular winery (Baird, 2012; Christensen et al., 2004; Hall & Johnson, 1998). A final option was provided where participants could list any other reasons which fell outside these options. Further questions were added to determine what type of relationship winegrowers had with their regional sustainable winegrowing program, and also asked whether participants thought that biosecurity should be part of each of these individual schemes (Hall 2003, 2005).

Source data

This cross-national survey utilised primary data obtained from participants who represent each of the 558 winegrowers located within New Zealand (Winetitles, 2015), the 125 winegrowers located in Tasmania (Winetitles, 2015) and 241 winegrowers located in Western Australia (Winetitles, 2015). These wineries all received copy of the survey via post, producing a combined total cross-national sample size of 924 wineries. A link to an online version of the survey was also provided to all participants should they prefer this particular option, and only two wineries from Western Australia elected to undertake this option. No electronic survey responses were received from either New Zealand or Tasmanian wineries.

558 surveys were sent out for the 2015 New Zealand survey, with 145 surveys being received back. Of these 145 wineries, 80 responded that they had in fact recently gone out of business since the publication of *The 2015 Australian and New Zealand Wine Industry Directory*

(Winetitles, 2015) but as these were still judged as valid responses, these surveys were still included in the overall response rate. The remaining 65 wineries who responded then provided the data that this study was based upon. This yielded a New Zealand response rate of 25.9 per cent.

Out of the 125 surveys sent out to Tasmanian wineries, a total of 25 were received back. Out of this 15 were complete and 10 responded that they had gone out of business since the publication of *The 2015 Australian and New Zealand Wine Industry Directory* (Winetitles, 2015). This yielded an overall response rate of 20 per cent. 241 surveys were sent out to Western Australian wineries, and a total of 60 were received back. Out of this 33 surveys were complete while 27 were listed as being return incomplete due to the winery concerned no longer being in business. This yielded a response rate of 24.9 per cent. When the Australian surveys received back are combined, out of the 366 surveys that were sent out 85 were returned, with 48 being complete and 37 being categorised as return to sender. This yielded a combined Australian response rate of 23.2 per cent.

With respect to prior response rates to the New Zealand based survey, the 1997 survey obtained 111 responses out of 270 producers, giving a response rate of 41.1 per cent (Hall & Johnson, 1997), whilst the second survey conducted in 2003 achieved a response rate of 121 usable responses out of the 419 wineries surveyed, resulting in a response rate of 28.9 per cent (Christensen et al., 2004). The 2010 survey, which was the third survey in this longitudinal time series, managed an overall response rate to 125 wineries (25 per cent) in total (Baird, 2012). For the 2015 New Zealand survey the response rate was 0.9 per cent higher than that achieved in 2010.

Procedure

Due to the nature of this study, it was important that there was a contact in Australia to help facilitate both the distribution to and collection of surveys from Tasmanian and Western Australian wineries. Associate Professor Haywantee Ramkissoon of Curtin University in Perth, Western Australia, was willing to act as a point of contact between the wineries in both of these regions and enable the data to be collected and then sent to the author for data entry and analysis.

Statistical analysis

Once all the completed New Zealand, Tasmanian and Western Australian surveys were returned, the results were entered into the SPSS software programme. This not only enabled analysis of the data that has been received, but also allowed for a comparative analysis to be undertaken where possible using data obtained by Christensen et al. (2004) in the 2003 New Zealand National Wineries' Survey and Baird (2012) in the 2010 New Zealand National Wineries' Survey for which the SPSS files were available. Data was analysed using ANOVAs where appropriate and also descriptive statistics to gauge what the reality was of what was happening on the ground regarding New Zealand and Australian wine producers' attitudes towards sustainable winegrowing practices. Once the analysis of the data was complete the longitudinal and comparative findings were then written up.

4.5 Ethical Considerations

This survey was the fourth undertaken in a series of National Winery Surveys (past New Zealand based surveys have been conducted in 1996/7, 2003/4 and in 2010), and the 2015 survey is the first cross-national variation conducted using this survey template. Previous ethics approval as a low risk research application has been granted for the National Winery Survey

by the Department of Tourism at the University of Otago (1996, 2003) and the Department of Business and Law at the University of Canterbury (2010); sustainability questions posed in the 2015 survey based on the work of Atkin et al. (2012) have also have also received previous ethics approval in 2012 from Sonoma State University in the United States. The main differences in the 2015 survey from previous survey iterations occurs with the introduction of new questions specifically relating to the adoption of sustainable winegrowing practices in the environmental issues section, and also country-specific questions relating to winery profile, visitor information collection, tourism and marketing.

The current survey was sent to participants from vineyards located within New Zealand, Tasmania and Western Australian derived from publicly available winery listings published in the *2015 Australian and New Zealand Wine Industry Directory*. In addition, further checking occurred from online searches and contact with industry organisations. This was also undertaken so as to identify winegrowers that had gone out of business. Completion of the questionnaire was the only stage at which participants were involved, and all participants were free to opt out of the research at any point.

Information was gathered only from those wineries who wished to participate in this survey. All responses were treated in the strictest confidence, and any results published were in aggregate form only to ensure the privacy and protection of all respondents, both individually and within a particular region. Names and addresses were only collected from participants for the purpose of allowing them to receive a copy of the findings, and these results were then sent to the participants concerned upon completion of the analysis. A copy of the low risk research ethics application approval for this thesis is included in the Appendices section (refer to Appendix I).

4.6 Chapter Summary

This chapter has outlined the methodology which was used in this study. Primary data was obtained from 558 winegrowers located within New Zealand (Winetitles, 2015), 125 winegrowers located in Tasmania (Winetitles, 2015) and 241 winegrowers located in Western Australia (Winetitles, 2015). Although a number of questions asked in previous wine tourism surveys have been retained, new questions have been asked with respect to sustainability, and country-specific questions have been altered in order to address regional differences as required to take into account the differences in the organisations used in the governance of wine tourism and sustainable winegrowing. As far as can be ascertained this is the first New Zealand or international study to provide such an extensive longitudinal analysis of wine tourism at both a national and an international scale as well as attempt a comparison between regions. This thesis will now move to reveal the findings of this study and discuss what these results imply for the international cool climate wine production within the context of sustainable winegrowing practices.

Chapter 5

Content Analysis of International Sustainable Winegrowing Programmes

5.1 Chapter introduction

This chapter represents the first stage of data collection for this thesis under the mixed-methods approach that was employed. This first stage utilises content analysis in order to examine the activities of the 53 sustainable winegrowing programmes that were identified as operating in the period October 2013 to September 2015.

Criteria for the inclusion of international sustainable winegrowing programmes

In order to ascertain whether or not a sustainable winegrowing initiative constituted inclusion as an actual programme within the framework of the content analysis a strict set of criteria needed to be developed. These criteria firstly looked at the funding and governance of the programme. If the programme was funded publicly, privately or funded by a mixture of both public and private organisations with the goal of enhancing sustainable wine growing as per the working definition offered in Chapter 1 of this thesis, then it was eligible for inclusion in this analysis. Programmes which were deemed to be competitive awards or competitions were excluded from the analysis; an example of this is the Botanical Research Institute of Texas (BRIT) who run the only annual international competition for wineries entitled the International Award of Excellence in Sustainable Winegrowing (Botanical Research Institute of Texas [BRIT], 2015). This particular programme is based on view that sustainable winegrowing encompasses “innovative sustainable practices in the categories of air, water, and land in both winegrowing and winemaking; social responsibility practices; and wine taste”

(BRIT, 2015, n.p.). Yalumba Winery in Australia is the only internationally-based winner of the BRIT platinum International Award of Excellence in Sustainable Winegrowing (BRIT, 2015). Through holding this annual competition BRIT aims to attract entrants from around the world who practice innovative sustainable techniques which go all the way from the “ground to glass” (BRIT, 2015, n.p.).

Programmes that were run by a firm solely for their internal use were also excluded. The Bordeaux region in France, for example, is home to Vignobles André Lurton who run and promote a company-based programme for sustainable winegrowing practices across six of their privately-owned vineyards (Vignobles André Lurton, 2015). This programme demonstrates a commitment to the environment based on ISO14001 protocols aimed to “reduce energy consumption, [enable the] systematic sorting and recycling of generated waste, [while at the same time] limiting inputs, [aiding the] search of the best methods of cultivation, [whilst also aiming to] prioritise the protection of the health of employees, residents and consumers” (Vignobles André Lurton, 2015, n.p.). As this programme was run solely by Vignobles André Lurton for their branded wineries and was not part of a wider sustainable winegrowing programme it was excluded from the analysis; this also ensured that there was a consistency amongst programmes, and that they did not solely focus solely on just one winery brand.

Table 5.1 illustrates the range of topics that were covered with those programmes suitable for inclusion in this analysis. However, it is important to note here that all because a topic is not covered on a particular website that this doesn’t mean that it is not offered. This could be due to lack of information provided by the website concerned or the simply due to the fact that the website itself is out of date.

Table 5.1. Overview of Content Analysis topics covered

Topic area	Sub-topics covered
Economic	Funding issues Governance Regulations Use of public/private standards
Environmental	Overview of how assessments are conducted Third party certification Climate change related issues Biosecurity issues Biodiversity issues Pest management related issues Water related issues Waste related issues Energy related issues Air pollution issues Issues surrounding the use of chemicals and sprays Organic and biodynamic wine production
Social Justice	General overview of social justice issues Migrant workers Labour issues Workers' rights issues Community based issues Education and outreach
General	Overview of international sustainable winegrowing programmes Third party certification Accreditation Branding

Technical terms utilised

Technical terminology related to sustainable winegrowing practices used for this analysis are indicated in Table 5.2. These technical terms focused on the three key areas of sustainable wine production - the economic, environmental and social justice aspects. Before each of these aspects is discussed it is also important to note that these technical terms were derived initially from the literature review, including the keywords used for journal articles (see Chapters 2 and 3). In addition, because of the comparative nature of this thesis terms were also derived from searching for terms on the Sustainable Winegrowing New Zealand [SWNZ] website, thereby providing a direct point of reference. Terms which did not readily fit under the three technical

aspects mentioned were included in a category labelled as ‘General’. In order to deal with language differences across the various international sustainable winegrowing programmes the Google translation function was used on websites that were not in English.

Table 5.2. Technical terms for content analysis derived from the Sustainable Winegrowing New Zealand website and extant literature

Technical aspect	Keywords found
Economic	Funding, governance, membership, public ownership, private ownership
Environmental	Climate change, biodiversity, biosecurity, certification, organic, biodynamic, integrated pest management, wastewater reduction, energy reduction, energy efficiency, air quality, chemical reduction, low-spray regimes
Social Justice	Community, training, education, outreach, workers’ rights, labour (also note that the spelling ‘labor’ was used for American and Canadian websites), migrant workers, law, legislation
General	Third party, certification, regulation, assessment, external audit, self-assessment, online assessment, accreditation, branding

Economic aspects

The technical terms which featured in the economic category relate to both the internal and external business pressures that sustainable winegrowing programmes face. These include how each programme is funded, whether the governance of the programme is based within public or private ownership (or a mixture of both), and also whether membership is required to be able to access the resources of the programme concerned.

Environmental aspects

Keywords that were found relating to environmental aspects pertain to terms that are used to describe sustainable winegrowing practices at both the vineyard level as well as broader overarching concepts which have the potential to affect sustainable wine production drawn from the literature which encompasses this area (Barber et al., 2009; Christ & Burritt, 2013; Forbes et al., 2009; Gabzdylova et al., 2009; Knowles & Hill, 2001; Pullman et al., 2010).

Vineyard level concepts included integrated pest management, wastewater reduction, energy reduction, energy efficiency, air quality, chemical reduction and the use of low-spray regimes to control chemical outputs. Broader environmental concepts covered within the content analysis include the areas of climate change, biodiversity, biosecurity and third-party certification. The final range of aspects that were covered related to biodynamic and organic production practices in order to ascertain which programmes embraced these types of initiatives.

Social justice aspects

The third key area covered represented technical terms that were related to aspects of social justice. This covered employee and employment related matters such as labour laws, migrant workers, workers' rights and whether education or training was provided as part of a sustainable winegrowing programme. The importance of stakeholder relationships was also highlighted through examining whether programmes mentioned the importance of community and outreach as being part of what was on offer to programme members.

General aspects

Technical aspects which could fall into more than one category were contained within a general category. These keywords included whether or not the winery used a particular type of assessment or audit procedure, or if the sustainable winegrowing programme concerned was capable of granting accreditation through third-party certification. The final aspect to be included in this category was whether or not branding in the form of logos representing sustainable winegrowing programmes were actually allowed to be used on the wine bottle labels produced by programme members.

5.2 Findings and discussion

Overview of international sustainable winegrowing programmes

A total of fifty-three international sustainable winegrowing programmes (refer to Table 5.3.) were located online and the websites for each programme were analysed using keyword searches. Using the set of criteria developed these programmes were deemed suitable for inclusion, and any websites that did not meet the criterion established were removed from the analysis. Two programmes were excluded from the analysis based on the criteria; these were the Botanical Research Institute of Texas [BRIT] in the United States, and French winery brand Vignobles André Lurton.

Programmes in terms of years since establishment

The longest running programme is that of the Lodi Winegrape Commission in California who started their sustainable winegrowing initiative in 1992 (Lodi Winegrape Commission, 2015) (Table 5.3). The Lodi programme has been extremely influential in terms of the development of other sustainable winegrowing programmes (Hall & Mitchell, 2008). The most recent programmes established were in Germany (Fair 'N' Green) and Austria (Austrian Wine) which were established in 2014 (Austrian Wine, 2014; Fair 'N' Green, 2014). An interesting development in the context of this thesis is that several programmes (Oregon Sustainable Certified Wine in the United States and WineSkills in the United Kingdom) had suffered from a lack of funding which had forced both of these programmes to be disestablished (Oregon Sustainable Certified Wine, 2014; Wineskills, 2015). In the case of Oregon Sustainable Certified Wine, any money remaining from the programme was given to the LIVE programme which took over the responsibility of governing the sustainable winegrowing programme in Oregon (Oregon Sustainable Certified Wine, 2014). It remains to be seen whether funding problems will affect the development of sustainable winegrowing programmes in the future.

Programme focus

Twenty-two of the programmes that were analysed in Table 5.3 were regional in terms of their focus, while 30 programmes operated nationwide. ECO-PROWINE was the only programme that was international in terms of focus (membership of this programme spans the six member countries of Italy, Spain, Portugal, Bulgaria, Greece and Austria) (ECO-PROWINE, 2015). In terms of national differences, the United States had 15 regional programmes listed across seven states. Italy contained the largest number of national initiatives with at least 15 nationwide programmes in operation during the review period.

Programme membership

Membership of programmes was nearly entirely voluntary in nature, with the Sustainable Winegrowing New Zealand [SWNZ] programme being the only programme analysed that was mandatory (Table 5.3). The United States and Italy recorded the largest degree of voluntary programmes on a national basis, with 15 programmes each. The nature of programme membership is of importance due to the current voluntary versus compulsory dynamic of international sustainable winegrowing programmes that exists; the ability of this dynamic to affect producer behaviours and practices in terms of internal business perceptions and external governance pressures is central to this study.

Assessment types, audit procedures and third-party certification

Table 5.4 illustrates the breakdown of the different types of assessment used, audit procedures that were undertaken, and whether or not a particular sustainable winegrowing programme also provided winegrowers with third-party certification. In order to clarify what is meant by the terminology utilised in this discussion, self-assessment refers to programmes where wineries

were given the ability to assess their on-site practices based on criteria set out in workbooks provided by their local sustainable winegrowing programme or via an online self-assessment tool presented on the Internet. External audits refer to the use of inspections carried out by representatives of the particular regional sustainable winegrowing programme concerned; if any of the criteria that make up the programme are not being met, then these representatives have the right to deny certification of the winery.

Out of the 53 programmes analysed, 47 utilised self-assessment produces (88.8 per cent) while four employed online self-assessment (7.5 per cent); only two programmes (Wineries of Niagara on the Lake in Canada and the Sustaining Success Strategy in Australia) recorded no assessment method used (3.7 per cent). External audits were undertaken by 27 of the programmes concerned (51 per cent), while third party certification was offered by 26 of the sustainable winegrowing programmes analysed (49 per cent).

Table 5.3. Overview of international sustainable winegrowing programmes

Country	Region	Organisation	Year started	Focus	Membership	
Canada	British Columbia	BC Sustainable Winegrowing Programme	2011	Regional	Voluntary	
	Ontario	Sustainable Winemaking Ontario	2007	Regional	Voluntary	
	Niagara	Wineries of Niagara on the Lake	2005	Regional	Voluntary	
	All regions	Canadian Vintners Association	2007	National	Voluntary	
United States	California	Certified California Sustainable Winegrowing (CCSW-Certified)	2002	Regional	Voluntary	
		Lodi Winegrowing Commission (LWC) Sustainable Workbook/Lodi Rules	1992	Regional	Voluntary	
		SIP Certified (3 rd Party Certification Programme)	2008	Regional	Voluntary	
		Napa Sustainable Winegrowing Group	1995	Regional	Voluntary	
		Napa Valley Vintners (Napa Green)	2008	Regional	Voluntary	
		Sonoma County Winegrowers	2014	Regional	Voluntary	
		Wine Institute	2002	Regional	Voluntary	
		Viticulture Association of the Santa Cruz Mountains	2004	Regional	Voluntary	
		Lake County Winegrowers Sustainable Winegrowing Programme	2012	Regional	Voluntary	
		Oregon Certified Sustainable Wine Programme	2008	Regional	Voluntary	
		New York	Long Island Sustainable Winegrowing (LISW)	2012	Regional	Voluntary
		Virginia	Vine Balance	2007	Regional	Voluntary
			Virginia Sustainable Viticulture Programme	2013	Regional	Voluntary
	Washington State	Winerywise	2007	Regional	Voluntary	
Various (Washington State, Idaho, Oregon)	Low Input Viticulture and Oenology (LIVE)	1999	Regional	Voluntary		
Australia	Tasmania	VinØ	2016	Regional	Voluntary	
	South Australia	McLaren Vale Sustainable Winegrowing Programme (MVSWP)	2012	Regional	Voluntary	
	All regions	Entwine Australia	2009	National	Voluntary	
		Sustaining Success Strategy	2002	National	Voluntary	
	Good Environmental Management (GEM)	2005	National	Voluntary		
New Zealand	All Regions	Sustainable Winegrowing New Zealand (SWNZ)	1995	National	Mandatory	
Chile	All regions	Wines of Chile	2010	National	Voluntary	
United Kingdom	All regions	United Kingdom Vineyards Association	2011	National	Voluntary	

Table 5.3. Overview of international sustainable winegrowing programmes (continued)

Country	Region	Organisation	Year started	Focus	Membership	
South Africa	All regions	Sustainable Wine South Africa (SWSA)	2010	National	Voluntary	
	All regions	Integrated Production of Wine (IPW)	1998	National	Voluntary	
	All regions	Biodiversity and Wine Initiative (BWI)	2004	National	Voluntary	
		WIETA	2002	National	Voluntary	
		Wines of South Africa (WOSA)	1999	National	Voluntary	
Germany	All regions	Fair Choice	2012	National	Voluntary	
		Fair 'N' Green	2014	National	Voluntary	
Italy	All regions	VIVA Sustainable Winegrowing Project	2011	National	Voluntary	
		Biodiversity Friend	2010	National	Voluntary	
		Teregeo	2010	National	Voluntary	
		Magis	2011	National	Voluntary	
		Vini 3S	2010	National	Voluntary	
		Ita.Ca/Gea.Vite	2010	National	Voluntary	
		Vino Libero	2011	National	Voluntary	
		New Green Revolution (Montefalco 2015)	2009	National	Voluntary	
		Salcheto Carbon Free	2011	National	Voluntary	
		CasaClima Wine	2010	National	Voluntary	
		Eko Catina/Eko Wine	2014	National	Voluntary	
		Vite.Net	2011	National	Voluntary	
		Sostenibilità Ambientale delle Filiere Agroalimentari Tramite Calcolo del Ciclo di Vita	2010	National	Voluntary	
		Sicily	SoStain	2010	Regional	Voluntary
		Spain	All regions	HAProWine	2010	National
Wineries for Climate Protection	2011			National	Voluntary	
France	All regions	Vignerons en Développement Durable	2007	National	Voluntary	
		Terra Vitis	2000	National	Voluntary	
		Champagne	Viticulture Raisonee	2001	Regional	Voluntary
		Bordeaux	Bordeaux Wine Carbon Footprint Calculator	2008	Regional	Voluntary
Austria	All regions	Austrian Wine	2014	National	Voluntary	
European Union	Italy, Spain, Portugal, Bulgaria, Greece, Austria.	ECO-PROWINE	2012	Multiple countries	Voluntary	

5.3 Issues related to economic concerns

This section will cover the findings that emerged using the keywords relating to the economic aspects of the international sustainable winegrowing programmes that were analysed and provide discussion based around these. The first part of this section will look at programme funding from an international and national perspective, followed by whether or not the nature of the funding provided for the programmes themselves affects whether sustainable wine-related branding is utilised on the actual wine bottles produced.

Programme funding

27 of the 53 programmes analysed were privately funded businesses (see Table 5.5); this form of funding was the dominant type which featured in this analysis. Second were the number of programmes featured a mixture of both public and private funding (16 programmes), while third were the remaining ten programmes which were publicly funded. National differences (also see Table 5.5) revealed that Canada featured the most publicly funded programmes that existed. The United States reported the most programmes which featured a mixture of public/private funding with six sustainable winegrowing initiatives falling into this category, while Italy featured the most privately funded programmes.

Table 5.4. Assessment types, audit procedures and third-party certification

Country	Region	Organisation	Type of assessment conducted	External audit	Third-party certification
Canada	British Columbia	BC Sustainable Winegrowing Programme	Self-assessment	✘	✘
	Ontario	Sustainable Winemaking Ontario	Self-assessment	✘	✘
	Niagara	Wines of Niagara on the Lake	None	✘	✘
	All regions	Canadian Vintners Association	Self-assessment	✘	✘
United States	California	Certified California Sustainable Winegrowing (CCSW-Certified)	Online self- assessment	✓	✓
		Lake Country Winegrape Growers (LCWC)	Self-assessment	✓	✓
		Lodi Winegrowing Commission (LWC) Sustainable Workbook/Lodi Rules	Self-assessment	✓	✓
		Vineyard Team/ Sustainability in Practice (SIP)	Self-assessment	✓	✓
	California	Napa Valley Vintners (Napa Green) (California)	Self-assessment	✓	✓
		Napa Sustainable Winegrowing Group	Self-assessment	✘	✘
		Sonoma County Winegrowers	Self-assessment	✓	✓
		Viticulture Association of the Santa Cruz Mountains	Online self- assessment	✓	✓
		Wine Institute	Self-assessment	✓	✓
	New York	Long Island Sustainable Winegrowing (LISW)	Self-assessment	✓	✓
	VineBalance	Self-assessment	✘	✘	
Virginia	Virginia Sustainable Viticulture Programme	Self-assessment	✓	✘	

Table 5.4. Assessment types, audit procedures and third-party certification (continued)

Country	Region	Organisation	Type of assessment conducted	External audit	Third-party certification
United States (cont.)	Washington State	Winerywise	Self-assessment	✓	✓
	Various (Oregon, Washington, Idaho)	Low Input Viticulture and Enology (LIVE)	Self-assessment	✓	✓
Australia	Tasmania	VinØ	Self-assessment	✗	✗
	South Australia	McLaren Vale Sustainable Winegrowing Programme (MVSWP)	Self-assessment	✓	✓
	All regions	Entwine Australia	Self-assessment	✗	✗
	All regions	Sustaining Success Strategy	None	✗	✗
New Zealand	All regions	Sustainable Winegrowing New Zealand (SWNZ)	Self-assessment	✓	✓
Chile	All regions	Wines of Chile	Self-assessment	✓	✓
United Kingdom	All regions	United Kingdom Vineyard Alliance	Online self-assessment	✗	✗
South Africa	All regions	Sustainable Wine South Africa (SWSA)	Self-assessment	✓	✓
		Integrated Production of Wine (IPW) Scheme	Self-assessment	✓	✓
		Biodiversity and Wine Initiative (BWI)	Self-assessment	✓	✓
		WIETA	Self-assessment	✓	✓
Italy	All regions	VIVA Sustainable Wine Project	Online self-assessment	✓	✓
		Teregeo	Self-assessment	✓	✓
		Magis	Self-assessment	✓	✓
		Vini 3S	Self-assessment	✗	✗
		Ita. Ca/Gea. Vite	Self-assessment	✗	✗
		Vino Libero	Self-assessment	✗	✗
		New Green Revolution/Montefalco 2015	Self-assessment	✗	✗
		Salcheto Carbon Free	Self-assessment	✗	✗
		CasaClima Wine	Self-assessment	✗	✗
		Eko Catina/Eko Wine	Self-assessment	✗	✗

Table 5.4. Assessment types, audit procedures and third-party certification (continued)

Country	Region	Organisation	Type of assessment conducted	External audit	Third-party certification
		Vite.Net	Self-assessment	x	x
	Sicily	SoStain	Self-assessment	x	x
Germany	All regions	FairChoice	Self-assessment	✓	✓
		Fair 'N' Green	Self-assessment	✓	✓
Spain	All regions	HApró Wine	Self-assessment	✓	✓
		Wineries for Climate Protection	Self-assessment	x	x
France	All regions	Vignerons en Développement Durable (VDD)	Self-assessment	✓	✓
		Terra Vitis	Self-assessment	x	x
	Champagne	Viticulture Raisonnee Programme	Self-assessment	x	x
	Bordeaux	Bordeaux Wine (CIVB) Carbon Footprint Calculator	Self-assessment	x	x
Austria	All regions	Austrian Wine	Self-assessment	✓	✓
European Union	All member countries	ECOPROWINE	Self-assessment	x	x
Total (%)			Self-Assessment: 88.8% Online self-assessment: 7.5% None: 3.7%	51%	49%

Table 5.5. National differences in funding for international sustainable winegrowing programmes

Country	Type of funding		
	Public	Public/Private	Private
United States	1	6	8
Italy*	0	4	11
Canada	2	1	1
New Zealand	1	0	0
Australia	1	2	2
United Kingdom	1	0	2
South Africa	1	0	1
Chile	0	1	1
France	0	1	3
Germany	0	0	2
Austria*	0	2	0
Spain*	0	3	0
Greece*	0	1	0
Portugal*	0	1	0
Bulgaria*	0	1	0

*Figure includes international membership of the ECOPROWINE programme.

Branding

Issues surrounding the use of branding in order to attract the ecologically conscious wine consumer have provided a rich stream of literature addressing this topic (Berghoef & Dodds, 2013; Delmas & Grant, 2014; Castka & Corbett, 2016; Forbes, 2012; Gilinsky Jr., Newton & Vega, 2016). 39.6 per cent of programmes utilised branding, while 60.4 per cent did not (refer to Table 5.6). Programmes which featured a mixture of both public and private funding were the most likely to use sustainability logos (referred to as seals) as part of their branding as indicated in Table 5.6. Ten programmes out the eighteen that were listed as having both public and private funding utilised this format. Here it is important to note that the criteria for whether branding was used was whether or not the seal was actually on the wine bottle itself. Of interest here is that it was found that some programmes (notably the very influential California Certified Sustainable Wine [CCSW] Programme in California and Entwine in Australia) would only allow branding to be used on letterheads and websites (California Certified Sustainable

Wine [CCSW], 2015; The Australian Wine Research Institute, 2015) and both of these programmes stipulated that logos were not to be used on bottles. CCSW stated that a consumer-facing eco-label would be looked at in the future once the programme achieved a widespread adoption amongst wineries (CCSW, 2015). However, CCSW's position raises the issue of at what point do sustainable winegrowing programmes decide that adoption is widespread enough in order to embrace eco-certification in terms of communicating this to the end consumer through the use of, for example, a logo. This approach almost borders on suggesting that a lack of confidence exists in terms of trusting wine producers to remain faithful to the strict criteria that programmes such as the CCSW abide by and, as such, the programme may be unwilling to risk its reputation on the possibility that there could be renegade wine producers who might not be meeting the third-party certification standards required.

National differences in terms of branding

In terms of programmes that are based around public funding and governance, only the Sustainable Wineries New Zealand [SWNZ] programme and the Sustainable Wine South Africa [SWSA] feature the use of consumer-facing eco-certification labels on their bottles. The remaining five publicly funded programmes currently do not use branding in this manner. Branding is more predominately used amongst programmes which are both in part funded publicly and privately, with ten programmes stating that logos were used on bottles; the United States had three programmes which fell into this category, which was the highest recorded number. Out of the programmes that were privately funded the United States once again led the number of programmes which used branding on bottles; an interesting point to note here is that although Italy currently has eleven programmes that are privately funded, Magis was the only programme that actually used branding on the bottles that were produced as part of this particular programme.

Table 5.6. Funding/governance basis vs. use of branding

Funding/governance basis	Name of programme	Country	Uses branding	No branding
Public	BC Sustainable Winegrowing Programme	Canada		✓
	Canada Vintners Association	Canada		✓
	Sustainable Winegrowing New Zealand (SWNZ)	New Zealand	✓	
	Winerywise	USA		✓
	Sustaining Success Strategy	Australia		✓
	United Kingdom Vineyard Alliance	United Kingdom		✓
	Bordeaux Wine Board (CIVB)	France		✓
	Sustainable Wine South Africa	South Africa	✓	
	Integrated Production of Wine (IPW)	South Africa	✓	
Biodiversity and Wine Initiative (BWI)	South Africa	✓		
Public/Private	Sustainable Winemaking Ontario	Canada	✓	
	Lake Country Winegrape Growers (LCWC)	United States		✓
	Lodi Winegrowing Commission (LWC) Sustainable Workbook/Lodi Rules	United States	✓	
	Napa Valley Vintners (Napa Green)	United States	✓	
	Long Island Sustainable Winegrowing (LISW)	United States	✓	
	VineBalance	United States		✓
	VinØ	Australia	✓	
	Wines of Chile	Chile	✓	
	ECO-PROWINE	Various	✓	
	HAprO Wine	Spain		✓
	Wineries for Climate Protection	Spain		✓
	VIVA Sustainable Wine Project	Italy	✓	
	Vignerons en Développement Durable (VDD)	France	✓	
	Austrian Wine	Austria	✓	
	Good Environmental Management [GEM]	Australia		✓
	Eko Catina/Eko Wine	Italy		✓
Private	Wines of Niagara on the Lake	Canada		✓
	Entwine	Australia		✓

Table 5.6. Funding/governance basis vs. use of branding (continued)

Funding/governance basis	Name of programme	Country	Branding	No branding
Private (cont.)	Wines of South Africa (WOSA)	South Africa	✓	
	California Sustainable Winegrowing Programme (SWP)	United States		✓
	CCSW Certified			
	Napa Sustainable Winegrowing Group	United States	✓	
	Sonoma County Winegrowers	United States		✓
	Vineyard Team/ Sustainability in Practice (SIP)	United States	✓	
	Certified			
	Viticulture Association of the Santa Cruz Mountains	United States		✓
	Virginia Vineyards Association	United States		✓
	Wine Institute	United States		✓
	McLaren Vale Sustainable Winegrowing Prog.	Australia	✓	
	Low Input Viticulture and Oenology (LIVE)	United States	✓	
	Teregeo	Italy		✓
	Viticulture Raisonnee Programme	France		✓
	Terra Vitis	France	✓	
	Biodiversity Friend	Italy		✓
	Magis	Italy	✓	
	SOSStain	Italy		✓
	Ita.Ca/Gea. Vite	Italy		✓
	Vino Libero	Italy		✓
	New Green Revolution/Montefalco 2015	Italy		✓
	Vini 3S	Italy		✓
	Salcheto Carbon Free	Italy		✓
	CasaClima Wine	Italy		✓
	Sostenibilità Ambientale delle Filiere Agroalimentari	Italy		✓
	Tramite Calcolo del Ciclo di Vita			
	Viticulture Raisonnee Programme	France		✓
Fair 'N' Green	Germany		✓	
Total (#)			21	32
Total (%)			39.6%	60.4%

5.4 Issues relating to environmental concerns

This section examines the findings relating to environmental issues (refer to Tables 5.7 and 5.8) that were obtained using keywords relating to environmental aspects covered by international sustainable winegrowing programmes. The first part of this section examines vineyard-related environmental issues from both an international and national perspective drawn from the extant literature within this area use (Christ & Burritt, 2013; Gabzdylova et al., 2009; Barber et al. 2009; Forbes et al., 2009; Knowles & Hill, 2001; Pullman et al., 2010), followed by coverage of other, but no less important issues such as biosecurity (Hall, 2003, 2005), biodiversity, climate change and chemical usage. An investigation into the support for biodynamic and organic winegrowing techniques will also be offered. Biodynamic winegrowing refers to a holistic approach which encompasses especially designed plant, animal and mineral based materials (New Zealand Winegrowers, 2019). Organic winegrowing is designed to encompass processes which move away from using harmful inputs by employing process and cycles that can be adapted to localised conditions (New Zealand Winegrowers, 2019). The level of support for each of these approaches will be the last areas to be explored.

Vineyard-related environmental issues

The findings relating to onsite vineyard-related environmental issues (Table 5.7) saw water management rank as the leading issue addressed, with coverage in 89 per cent of the programmes analysed; this supports the notion this is also an area of real concern within the extant literature concerning this topic (Castex, Tejada & Beniston, 2015; Christ & Burritt, 2013; Gabzdylova et al., 2009; Miglietta & Morrone, 2018). Soil management and waste management were the most important issue with 86 per cent of programmes dealing with this topic area; the next most frequently referred to issues were those of air quality and energy efficiency which ranked third equal and were both covered by 67 per cent of programmes

studied. Table 5.8 explores the national differences regarding environmental issues for international sustainable winegrowing programmes. These findings show that apart from the issue of biosecurity there is a prevailing trend of United States based programmes leading the way in many of the environmentally focused areas closely followed by Italy and Australia; a comprehensive breakdown of the national differences in each of the 12 topic areas covered concerning environmental issues is covered in the rest of this section.

Water management

49 programmes (92.5 per cent) featured references to water management issues. The United States and Italy both featured the highest number of programmes that were concerned about this issue (13 programmes each looked at this topic). All international sustainable winegrowing programmes that were analysed mentioned the area of water management as one of concern.

Soil management

Overall 46 programmes (86.8 per cent) that were analysed featured material relating to soil management. The same initial pattern emerged when considering the area of waste management as occurred in regard to soil management; the United States was once again the most prominent advocate in terms of soil management issues.

Integrated Pest Management

Analysis of whether initiatives addressed Integrated Pest Management showed that 38 programmes (71.6 per cent) referred to this topic. United States based programmes were the most proactive in this area with eleven programmes featuring information on this subject. Of interest here is that both the United Kingdom and Chile did not directly address this topic within either of their programmes.

Air quality and energy efficiency

The issue of air quality was covered by 36 programmes (67.9 per cent) and Italy featured the most programmes with that directly addressed this subject (13 programmes). Of concern here is that both South Africa and the United Kingdom did not address this issue at all; this was surprising and warrants further investigation within the survey component of this thesis. A similar pattern to the air quality issues was also shown to exist regarding energy efficiency which featured in 37 programmes (69.8 per cent) and Italy was the most proactive country on this front as well. South African sustainable winegrowing programmes did not address the topic of energy efficiency at all.

Chemical usage

Chemical usage (or low spray regimes as a technical terminology also adopted in this study) was a topic covered by all 39 programmes (73.6 per cent). All countries, bar the United Kingdom, featured some programmes that included information on chemical usage. The United States dominated this area with 13 programmes referring to this issue. Of interest here is that under half of the programmes in Australia currently address chemical usage, which is surprising given the importance placed on chemical reduction in the current body of literature available within this area of sustainable winegrowing production (Christ & Burritt, 2013; Flores, 2018; Forbes et al., 2009; Gabzdylowa et al., 2009; Marshall et al., 2010; Merli, Preziosi & Acampora, 2018; Schäufele & Hamm, 2017; Zahraie et al., 2016).

Biosecurity

Investigation of some of the broader issues within the environmental context (Table 5.8) revealed a lack of overt attention in international sustainable winegrowing programmes with respect to biosecurity. Only one initiative (or 1.9 per cent of all programmes), Wine Tasmania, actively pursued biosecurity as part of their programme when the initial content analysis was conducted in 2015 (Wine Tasmania, 2015). Sustainable Wineries New Zealand only began addressing biosecurity in 2017 as part of the New Zealand Government Industry Agreement [GIA] (New Zealand Winegrowers, 2018b), so for the sake of consistency in this comparison all figures are based on the 2015 figures. Sustainable Wine South Africa does discuss invasive species but falls short of addressing biosecurity as an issue in its own right (Wines of South Africa [WOSA], 2015).

Given that biosecurity was an area which featured in only one sustainable winegrowing programme during the content analysis indicates a potentially significant issue in sustainable winegrowing programme practices. Previous research by Hall (2003, 2005) has also indicated that there are significant issues in terms of how biosecurity is addressed at the vineyard level, so these findings clearly demonstrate that this issue also warrants further investigation within the survey component of this thesis.

Climate change

The response amongst sustainable winegrowing producers towards climate change is an area where the dual approaches of adaptation and mitigation have been directly addressed within the extant literature (Fleming, Park & Marshall, 2015; Jones et al., 2005; Schultze & Sabbatini, 2019; Shaw, 2017; Zhu et al., 2016), and this concern was also demonstrated on an international level across the sustainable winegrowing programmes that were analysed. Within the domain

of climate change both the United States and Italy led the way with 12 programmes addressing this area. The only programme that did not directly address climate change was in the United Kingdom; as other countries within the European Union strive to address the challenges that are being presented by climate change it would appear based on this evidence that such concerns are currently not being felt at the wine industry level in the United Kingdom.

46 (86.8 per cent) of programmes address climate change; the way in which this topic was addressed varies in terms of the fact that several programmes (Italian programme Ita. Ca/Gea. Vite and French programme the Bordeaux Wine Carbon Footprint Calculator) were based around actual environmental calculators designed to address issues caused by climate change on the vineyard itself (such as soil erosion). Also Spain boasted the first programme solely dedicated to climate change in the form of the Wineries for Climate Protection programme. This programme aims to encourage wineries to reduce their carbon footprint through becoming an “international benchmark on wine-growing and environmental issues, providing solutions and improvements in environmental protection and sustainability” (Wineries for Climate Protection, 2015, n.p.).

Biodiversity

The importance of biodiversity within sustainable winegrowing programmes revealed a difference in approach on a national level; an example of this can be seen with Sustainable Wine South Africa (2015, n.p.) boldly stating that “when biodiversity is intact, species and ecosystems are resilient, enabling them to adapt to environmental changes. When biodiversity is lost, nature responds unpredictably, making it difficult for growers to plan production and protect natural resource.” Contrast this attitude with that of the United Kingdom where the topic of biodiversity did not even get a mention at all. This demonstrates that there appears to

be two schools of thought on this issue; either programmes are enthusiastic in their approach, or simply do not see the value in including information on what they might offer in this topic area on their website. Italian sustainable winegrowing programmes led the way in terms of discussing biodiversity (12 programmes).

In terms of the global positioning of biodiversity, the results of this analysis revealed that this topic featured in 45 (84.9 per cent) of the programmes studied. Biodiversity appeared to be an important feature with some programmes dedicating a whole section to just this one area alone; a notable example of this was the Sustainable Winegrowing South Africa (SWSA) website which features an entire section featuring information related to biodiversity issues (SWSA, 2015). The use of chemicals and the bid to lower the current level of sprays being used was mentioned by 39 (73.6 per cent) of the programmes analysed; the analysis of this particular topic was conducted utilising the terms ‘low-spray regime’ and ‘chemical usage’ due to the fact that the programmes analysed would refer to this issue in differing ways. This served to eliminate the possibility that although a particular programme might not use an exact specific keyword relating to the use of chemicals, it did not necessarily mean that this topic area was not covered within the scope of the programme concerned.

Biodynamic wine production

Biodynamic wine production featured in 24 (45.3 per cent) of the programmes analysed. This topic was a popular issue in the United States, Both the United Kingdom and Spain made no mention of biodynamic wine production on any of their sustainable winegrowing programme websites.

Organic wine production

When considering organic wine production techniques once again both the United Kingdom and Spain did not cover this area at all. All other countries that were analysed covered organic wine production techniques; however, there was less interest in biodynamic production techniques than organic production techniques. 24 programmes (45.3 per cent) covered biodynamic issues, while 30 (56.6 per cent) of programmes covered issues surrounding organic wine production.

Table 5.7. Onsite environmental issues covered for vineyards

Country	Region	Organisation	Integrated Pest Management	Water Management	Soil Management	Waste Management	Air Quality	Energy Efficiency
Canada	British Columbia	BC Sustainable Winegrowing Programme	✓	✓	✓	✓	✓	✓
	Ontario	Sustainable Winemaking Ontario	x	✓	✓	✓	✓	✓
	Niagara	Wineries of Niagara on the Lake	✓	✓	✓	✓	✓	x
	All regions	Canadian Vintners Association	x	✓	✓	✓	✓	✓
United States	California	California Sustainable Winegrowing Programme (SWP)	✓	✓	✓	✓	✓	✓
		Lodi Winegrowing Commission (LWC) Sustainable Workbook/Lodi Rules	✓	✓	✓	✓	✓	✓
		Vineyard Team/ Sustainability in Practice (SIP)	✓	✓	✓	✓	✓	✓
		Napa Sustainable Winegrowing Group	x	✓	✓	✓	✓	x
		Napa Valley Vintners (Napa Green) (California)	x	✓	✓	✓	✓	✓
		Sonoma County Winegrowers	✓	✓	✓	✓	✓	✓
		Wine Institute	✓	✓	✓	✓	✓	✓

Table 5.7. Onsite environmental issues covered for vineyards (continued)

Country	Region	Organisation	Integrated Pest Management	Water Management	Soil Management	Waste Management	Air Quality	Energy Efficiency
		Viticulture Association of Santa Cruz Mountains	✓	✓	✓	✓	✓	✓
		Lake County Winegrowers	✓	✓	✓	✓	✓	✓
	New York	Vine Balance	✓	✓	✓	✓	✓	✓
		Long Island Sustainable Winegrowing (LISW)	✓	✓	✓	✓	x	x
	Texas	Botanical Research Institute of Texas (BRIT)	✓	✓	✓	✓	✓	✓
	Virginia	Virginia Sustainable Viticulture Programme	✓	x	✓	x	x	x
	Washington State	Winerywise	x	✓	x	✓	x	✓
	Various (Washington State, Idaho, Oregon)	Low Input Viticulture and Oenology (LIVE)	✓	✓	✓	✓	x	x
Australia	Tasmania	VinØ	✓	✓	✓	✓	x	x
	South Australia	McLaren Vale Sustainable Winegrowing Programme (MVSWP)	✓	✓	✓	✓	x	x

Table 5.7. Onsite environmental issues covered for vineyards (continued)

Country	Region	Organisation	Integrated Pest Management	Water Management	Soil Management	Waste Management	Air Quality	Energy Efficiency
Australia (cont.)	All regions	Entwine Australia	✓	✓	✓	✓	✗	✗
		Good Environmental Management (GEM)	✓	✓	✓	✗	✗	✗
		Sustaining Success Strategy	✗	✓	✓	✓	✗	✓
New Zealand	All regions	Sustainable Winegrowing New Zealand (SWNZ)	✓	✓	✓	✓	✓	✓
Chile	All regions	Wines of Chile	✗	✓	✓	✓	✓	✓
United Kingdom	All regions	United Kingdom Vineyard Association	✗	✓	✓	✓	✗	✓
South Africa	All regions	Sustainable Wine South Africa (SWSA)	✓	✓	✓	✓	✗	✗
		Integrated Production of Wine (IPW) Scheme	✓	✓	✓	✓	✗	✗
		Biodiversity and Wine Initiative (BWI)	✓	✗	✗	✗	✗	✗
		WIETA	✗	✗	✗	✗	✗	✗
Germany	All regions	Fair Choice	✓	✓	✓	✓	✓	✓
		Fair 'N' Green	✓	✓	✓	✓	✓	✓

Table 5.7. Onsite environmental issues covered for vineyards (continued)

Country	Region	Organisation	Integrated Pest Management	Water Management	Soil Management	Waste Management	Air Quality	Energy Efficiency
Italy	All regions	VIVA Sustainable Winegrowing Project	✓	✓	✓	✓	✓	✓
		Biodiversity Friend	✓	✓	✓	✓	✓	✓
		Tergeo	✓	✓	✓	✓	✓	✓
		Magis	✓	✓	✓	✓	✓	✓
		Vini 3S	✓	✓	✓	✓	✓	✓
		Ita. Ca/Gea. Vite	✗	✗	✗	✗	✓	✓
		Vino Libero	✗	✓	✓	✓	✗	✗
		New Green Revolution (Montefalco 2015)	✗	✓	✓	✓	✓	✓
		Salcheto Carbon Free	✓	✓	✓	✓	✓	✓
		CasaClima Wine	✗	✓	✗	✓	✓	✓
		Eko Catina/Eko Wine	✗	✓	✗	✗	✓	✓
		Vite.Net	✓	✓	✓	✓	✓	✗
	Sicily	SoStain	✓	✓	✓	✓	✓	✓
Spain	All regions	HApró Wine	✗	✓	✓	✓	✗	✗
		Wineries for Climate Change	✗	✓	✗	✓	✓	✓

Table 5.7. Onsite environmental issues covered for vineyards (continued)

Country	Region	Organisation	Integrated Pest Management	Water Management	Soil Management	Waste Management	Air Quality	Energy Efficiency
France	All regions	Vignerons en Développement Durable	✓	✓	✓	✓	✓	✓
		Terra Vitis	✓	✓	✓	✓	✗	✗
	Champagne	Viticulture Raisonee	✓	✓	✓	✓	✓	✓
	Bordeaux	Bordeaux Wine (CIVB) Carbon Footprint Calculator	✗	✗	✗	✗	✓	✓
	Bordeaux	Vignobles André Lurton	✓	✓	✓	✓	✗	✓
Austria	All regions	Austrian Wine	✓	✗	✓	✗	✗	✗
Various	Italy, Spain, Portugal, Bulgaria, Greece, Austria.	ECOPROWINE	✓	✓	✓	✓	✓	✓
Total (#)			38	49	46	47	36	37
Total (%)			71.6%	92.5%	86.8%	88.7%	67.9%	69.8%

Table 5.8. Overview of the coverage of environmental issues for sustainable winegrowing programmes

Country	Region	Organisation	Biosecurity	Climate Change	Biodiversity	Low spray regime	Biodynamic	Organic	
Canada	British Columbia	BC Sustainable Winegrowing Programme	x	✓	✓	✓	x	✓	
	Ontario	Sustainable Winemaking Ontario	x	✓	✓	✓	✓	✓	
	Niagara	Wineries of Niagara on the Lake	x	✓	✓	x	✓	✓	
	All regions	Canadian Vintners Association	x	✓	✓	✓	✓	✓	
United States	California	California Sustainable Winegrowing Programme (SWP) CC-SW Certified	x	✓	✓	✓	✓	✓	
		Lodi Winegrowing Commission (LWC) Sustainable Workbook/Lodi Rules	x	✓	✓	✓	✓	✓	
		Vineyard Team/ Sustainability in Practice (SIP Certified)	x	✓	✓	✓	✓	✓	
		Napa Sustainable Winegrowing Group	x	✓	✓	✓	✓	✓	
		Napa Valley Vintners (Napa Green) (California)	x	✓	✓	✓	✓	✓	
		Sonoma County Winegrowers	x	✓	✓	✓	x	✓	
		Wine Institute	x	✓	✓	✓	x	✓	
		California	Viticulture Association of Santa Cruz Mountains	x	x	x	✓	✓	✓
			Lake County Winegrowers	x	✓	✓	✓	✓	✓

Table 5.8. Overview of the coverage of environmental issues for sustainable winegrowing programmes (continued)

Country	Region	Organisation	Biosecurity	Climate Change	Biodiversity	Low spray regime	Biodynamic	Organic
United States (cont.)	New York	Vine Balance	x	✓	✓	✓	x	x
		Long Island Sustainable Winegrowing (LISW)	x	✓	✓	✓	x	x
	Virginia	Virginia Sustainable Viticulture Programme	x	✓	x	✓	✓	✓
	Washington State	Winerywise	x	x	x	x	x	x
	Various	Low Input Viticulture and Oenology (LIVE)	x	✓	✓	✓	x	x
Australia	Tasmania	VinØ	✓	✓	✓	✓	✓	✓
	South Australia	McLaren Vale Sustainable Winegrowing Programme (MVSWP)	x	✓	✓	✓	✓	✓
	All regions	Entwine Australia	x	✓	✓	x	x	x
		Good Environmental Management (GEM)	x	✓	✓	x	x	x
		Sustaining Success Strategy	x	✓	✓	x	x	x
New Zealand	All regions	Sustainable Winegrowing New Zealand (SWNZ)	x	✓	✓	✓	✓	✓
Chile	All regions	Wines of Chile	x	✓	✓	✓	✓	✓

Table 5.8. Overview of the coverage of environmental issues for sustainable winegrowing programmes (continued)

Country	Region	Organisation	Biosecurity	Climate Change	Biodiversity	Low spray regime	Biodynamic	Organic
United Kingdom	All regions	United Kingdom Vineyard Association	x	x	x	x	x	x
South Africa	All regions	Sustainable Wine South Africa (SWSA)	x	✓	✓	✓	✓	✓
		Integrated Production of Wine (IPW) Scheme	x	✓	✓	✓	✓	✓
		Biodiversity and Wine Initiative (BWI)	x	✓	✓	✓	✓	✓
		WIETA	x	x	x	✓	x	x
Germany	All regions	Fair Choice	x	✓	✓	x	✓	✓
		Fair 'N' Green	x	✓	✓	✓	x	✓
Italy	All regions	VIVA Sustainable Winegrowing Project	x	✓	✓	✓	x	x
		Biodiversity Friend	x	x	✓	x	x	x
		Tergeo	x	✓	✓	✓	x	x
		Magis	x	✓	✓	✓	x	x
		Vini 3S	x	✓	✓	x	✓	✓
		Ita. Ca/Gea. Vite	x	✓	✓	x	x	x
		Vino Libero	x	x	✓	x	x	✓
		New Green Revolution (Montefalco 2015)	x	✓	✓	✓	x	x
		Salcheto Carbon Free	x	✓	✓	✓	✓	✓
		CasaClima Wine	x	✓	x	x	x	x
		Eko Catina/Eko Wine	x	✓	x	x	x	✓
		Vite.Net	x	x	✓	✓	x	x
	Sicily	SoStain	x	✓	✓	✓	x	x

Table 5.8. Overview of the coverage of environmental issues for sustainable winegrowing programmes (continued)

Country	Region	Organisation	Biosecurity	Climate Change	Biodiversity	Low spray regime	Biodynamic	Organic
Spain	All regions	HAprWine	✗	✓	✓	✗	✗	✗
		Wineries for Climate Protection	✗	✓	✓	✓	✗	✗
France	All regions	Vignerons en Développement Durable	✗	✓	✓	✓	✗	✗
		Terra Vitis	✗	✓	✗	✓	✗	✗
	Champagne	Viticulture Raisonee	✗	✗	✓	✓	✓	✓
	Bordeaux	Bordeaux Wine Carbon Footprint Calculator	✗	✓	✓	✓	✗	✗
Austria	All regions	Austrian Wine	✗	✓	✓	✓	✓	✓
European Union	Italy, Spain, Portugal, Bulgaria, Greece, Austria.	ECOPROWINE	✗	✓	✓	✓	✓	✓
Total (#)			1	46	45	39	24	30
Total (%)			1.9%	86.8%	84.9%	73.6%	45.3%	56.6%

5.5 Issues related to social justice concerns

As the third area to be examined within the three key areas of sustainable winegrowing practices, analysis of social justice issues revealed some interesting findings in terms of the attitudes that exist at both the national and international level for sustainable winegrowing programmes in this area. Table 5.9 illustrates these issues from the key elements within this domain that were covered within the international context, and all figures derived for this section are taken from this table. The first aspects in terms of social justice to be examined were labour laws and whether the treatment of migrant workers was addressed. Second, programmes were examined to see whether or not they had an obvious community focus in their mandates. Third, the level of education and outreach that was promoted through each of the programmes was investigated, followed by an examination of whether training was provided for vineyard workers to enable and encourage the adoption of sustainable winegrowing practices. Each of these elements will now be examined in turn.

Labour laws

Analysis of national differences regarding social justice issues illustrated that there were definite issues that needed attention regarding workers' rights. Table 5.9 indicates these differences across all five elements examined under the overarching theme of social justice; the results of these differences are all derived from this table and will be examined in the following section.

When examining the differences in concerning how labour laws were addressed by sustainable winegrowing programmes, 28 programmes (52.8 per cent) were found to cover this subject. The United States featured the most programmes which directly addressed labour laws and regulations; twelve programmes in total covered this area, and the State of California was by

far the most prominently featured region in terms of advocating laws that ensured the fair treatment of workers. Spain and Chile neglected to address this topic at all on any of their sustainable winegrowing programme websites.

The results obtained that only 28 (52.8 per cent) of programmes considered labour laws as part of their scheme is clearly an issue. This highlights that there is definitely the need for greater advocacy within this area in order to safeguard vineyard workers from mistreatment. Only 9 programmes (17 per cent) of all sustainable winegrowing programmes included in the analysis included the protection of migrant workers' rights – the advocacy of this aspect was most prominent amongst United States based sustainability programmes in the State of California.

The treatment of migrant workers was an issue which showed some concerning aspects which clearly shows problems exist in terms of the seriousness with which problems within this area are taken at the industry level. The United States featured six programmes which addressed this point. Of concern here is that the remaining countries covered in this content analysis did not address the issue of migrant workers at all on their websites; this does not mean that they do not address this topic in some other form that is offline, however. Based on this evidence and the void of coverage within this domain by international sustainable winegrowing programmes it is important that questions relating to this issue are covered in the survey component of this thesis.

Community focus

The notion of community as used within sustainable winegrowing programmes is arguably best summarised by the definition offered by the Californian Sustainable Winegrowing Programme which carries the aim of “demonstrating how working closely with neighbours, communities and other stakeholders to maintain an open dialogue can address concerns, enhance mutual respect, and accelerate results” (Californian Sustainable Winegrowing Alliance [CSWA],

2015, n.p.). The focus on community was an aspect that was covered by all of the international sustainable winegrowing programmes analysed in this study.

When viewed from a global perspective, 48 (90.6 per cent) of the international sustainable winegrowing programmes analysed stated that they had a community focus (refer to Table 5.9). This indicates that concern for stakeholder wellbeing and ensuring that local communities are considered is an integral part of how sustainable winegrowing programmes are designed; illustrating the benefits that can be gained to the community from the pursuit of sustainable winegrowing practices is at the core of many of the individual programmes.

Education and outreach

The area of education and outreach was dominated by the United States who boasted fourteen programmes in this area, while Italy ranked in second place with eleven programmes. Canada and Australia ranked in third place with four programmes each focusing on this issue. The fact that not all sustainable winegrowing programmes saw education and outreach as an important way to communicate information regarding sustainable winegrowing practices is an issue that requires further investigation via survey questions to gain the supply side perspective on this issue. This would also serve to identify whether the current levels of communication between sustainable programmes and winegrowers could benefit from a greater degree of contact than what is presently occurring.

Education and outreach was also an area which based on the results obtained (refer to Table 5.10) indicated that this was a priority for programmes regardless of location. 47 programmes (88.7 per cent) were recorded as having an educational focus; this focus extended over a range of options with newsletters, regular meetings, workshops and technical bulletins featuring

prominently; on-site visits and conferences were also important vehicles for the transmission of educational information and improving the outreach provided by sustainable winegrowing programmes towards their constituents.

Training

A similar pattern as with education and outreach emerged in the area of training with the. Of interest and some concern regarding this issue is that the European Union countries of Greece, Portugal and Bulgaria offered no training in sustainable winegrowing practices on their website; however, this does not mean that they might chose other channels to promote training this area.

Ensuring that vineyard workers had the appropriate training to be able to perform the tasks required to improve the sustainability of their current on-site practices was also rated as an extremely important aspect of sustainable winegrowing programmes when viewed from the international perspective. Training was offered by 40 (75.5 per cent) of the programmes currently in operation; although this percentage figure ranked below education and community involvement overall, it was interesting to find amongst the programmes analysed that training not only meant encouraging a greater degree of sustainable practices at the vineyard level, but also encompassed a view towards improving the existing health and safety standards (31 programmes which equates to 68.9 per cent of programmes actively addressed this area) experienced by workers as well.

Table 5.9. Labour laws, migrant workers, community focus, education/outreach and training

Country	Region	Organisation	Labour Laws	Migrant workers	Community focus	Education and outreach	Health and safety	Training	
Canada	British Columbia	BC Sustainable Winegrowing Programme	✓	✓	✓	✓	✓	✓	
	Ontario	Sustainable Winemaking Ontario	✗	✗	✓	✓	✓	✓	
	Niagara	Wineries of Niagara on the Lake	✗	✗	✓	✓	✗	✗	
	All regions	Canadian Vintners Association	✓	✗	✓	✓	✓	✓	
United States	California	California Sustainable Winegrowing Programme (SWP) CCSW-Certified	✓	✓	✓	✓	✓	✓	
		Lodi Winegrowing Commission (LWC) Sustainable Workbook/Lodi Rules	✓	✗	✓	✓	✓	✓	
		Vineyard Team/ Sustainability in Practice (SIP) Certified	✓	✗	✓	✓	✓	✓	
		Napa Valley Vintners (Napa Green) (California)	✓	✓	✓	✓	✓	✓	
		Napa Sustainable Winegrowing Group	✓	✓	✓	✓	✓	✓	
		Wine Institute	✓	✓	✓	✓	✓	✓	
		Viticulture Association of the Santa Cruz Mountains	✓	✗	✓	✓	✗	✓	
		Lake County Winegrowers Sustainable Winegrowing Programme	✓	✓	✓	✓	✓	✓	
		New York	Long Island Sustainable Winegrowing (LISW)	✓	✗	✓	✓	✓	✓

Table 5.9. Labour laws, migrant workers, community focus, education/outreach and training (continued)

Country	Region	Organisation	Labour Laws	Migrant workers	Community focus	Education and Outreach	Health and safety	Training
United States (cont.)	New York (cont.)	Vine Balance	✓	✗	✓	✓	✓	✓
	Virginia	Virginia Sustainable Viticulture Programme	✗	✗	✓	✓	✓	✓
	Various (Washington, Idaho, Oregon)	Low Input Viticulture and Oenology (LIVE)	✓	✗	✓	✓	✓	✓
Australia	Tasmania	VinØ	✗	✗	✓	✓	✓	✓
	South Australia	McLaren Vale Sustainable Winegrowing Programme (MVSWP)	✓	✗	✓	✓	✓	✓
	All regions	Entwine Australia	✗	✗	✓	✓	✓	✓
		Sustaining Success Strategy	✗	✗	✓	✓	✓	✓
		Good Environmental Management (GEM)	✗	✗	✓	✓	✓	✓
New Zealand	All regions	Sustainable Winegrowing New Zealand (SWNZ)	✗	✗	✓	✓	✓	✓
Chile	All regions	Wines of Chile	✓	✗	✓	✓	✗	✓
United Kingdom	All regions	United Kingdom Vineyard Association	✓	✗	✓	✓	✗	✓
South Africa	All regions	Sustainable Wine South Africa (SWSA)	✓	✗	✓	✓	✓	✓
	All regions	Integrated Production of Wine (IPW)	✓	✗	✓	✓	✓	✓
		Wines of South Africa (WOSA)	✓	✓	✓	✓	✗	✓
		Biodiversity and Wine Initiative (BWI)	✗	✗	✓	✓	✗	✗

Table 5.9. Labour laws, migrant workers, community focus, education/outreach and training (continued)

Country	Region	Organisation	Labour Laws	Migrant workers	Community focus	Education and Outreach	Health and safety	Training
South Africa (continued)		WIETA	✓	✓	✗	✗	✓	✗
Germany	All regions	Fair Choice	✓	✓	✗	✗	✓	✗
		Fair 'N' Green	✓	✗	✓	✓	✓	✓
Italy	All regions	VIVA Sustainable Winegrowing Project	✗	✗	✓	✓	✓	✓
		Biodiversity Friend	✗	✗	✓	✓	✗	✓
		Teregeo	✗	✗	✓	✓	✗	✓
		Magis	✗	✗	✓	✓	✗	✓
		Vini 3S	✗	✗	✗	✗	✗	✗
		Ita.Ca/Gea.Vite	✗	✗	✗	✓	✗	✓
		Vino Libero	✗	✗	✓	✓	✓	✗
		New Green Revolution (Montefalco 2015)	✓	✗	✓	✓	✗	✓
		Salcheto Carbon Free	✗	✗	✗	✗	✗	✗
		CasaClima Wine	✗	✗	✓	✓	✓	✓
		Eko Catina/Eko Wine	✗	✗	✗	✓	✗	✓
		Vite.Net	✗	✗	✓	✗	✗	✗
	Sicily	SoStain	✓	✗	✓	✓	✗	✓
Spain	All regions	HApró Wine	✗	✗	✓	✓	✗	✗
		Wineries for Climate Change	✗	✗	✓	✓	✗	✗
France	All regions	Vignerons en Développement Durable	✓	✗	✓	✓	✓	✓
		Terra Vitis	✓	✗	✓	✓	✓	✓
	Champagne	Viticulture Raisonee	✗	✗	✓	✓	✗	✓

Table 5.9. Labour laws, migrant workers, community focus, education/outreach and training (continued)

Country	Region	Organisation	Labour Laws	Migrant workers	Community focus	Education and Outreach	Health and safety	Training
France (continued)	Bordeaux	Bordeaux Wine (CIVB) Carbon Footprint Calculator	x	x	✓	x	x	x
Austria	All regions	Austrian Wine	✓	x	✓	✓	✓	✓
European Union	Italy, Spain, Portugal, Bulgaria, Greece, Austria	ECOPROWINE	✓	x	✓	✓	✓	x
Total (#)			28	9	48	47	31	40
Total (%)			52.8%	17.0%	90.6%	88.7%	68.9%	75.5%

5.6 Sustainable Winegrowing New Zealand's current position in 2019

Table 5.10 details the current position of Sustainable Winegrowing New Zealand in terms of information offered on their website in order to see how this program compares with the offerings of their overseas contemporaries. The critical point to note here in terms of national differences is that SWNZ is mandatory for New Zealand wineries to join, and as such relies heavily on public funding through the New Zealand Government (New Zealand Winegrowers, 2018a). Analysis of the current position of SWNZ saw that both labour laws and migrant workers' rights are lacking from the current programme. This is important to note given ongoing problems which have occurred with the treatment of migrant workers in the Marlborough winegrowing region of New Zealand (Radio New Zealand, 2019a). It would appear that in order to protect the reputation of the New Zealand wine industry in terms of the treatment of workers that the SWNZ programme needs to address the lack of attention in this area.

All other aspects that featured as criteria for this content analysis now feature as part of the SWNZ programme; however, references to biosecurity are very recent additions to this programme (New Zealand Winegrowers, 2018b). It is clear that this area still needs a degree of development within the wider context of this programme and needs to be taken more seriously rather than the token gesture which the SWNZ website currently offers.

Table 5.10 Sustainable Winegrowing New Zealand’s current position in terms of attributes offered in 2019

Variable	Attribute offered (Yes or No)		Variable	Attribute offered (Yes or No)	
	Yes	No		Yes	No
Self- assessment	✓		Biosecurity*	✓	
External audits	✓		Climate Change	✓	
Third-party certification	✓		Biodiversity	✓	
Publicly funded	✓		Low spray regime	✓	
Public/Private Partnership		✓	Biodynamic	✓	
Privately funded		✓	Organic	✓	
Uses branding	✓		Labour laws		✓
Integrated Pest Management	✓		Migrant workers		✓
Waste Management	✓		Community focus	✓	
Water Management	✓		Education and outreach	✓	
Soil Management	✓		Health and safety	✓	
Air Quality	✓		Training	✓	
Energy Efficiency	✓		Mandatory to join	✓	

*Note: Biosecurity was only first covered on the SWNZ website in 2017 as part of New Zealand’s Government Industry Agreement [GIA]. When the initial content analysis was undertaken in 2015, biosecurity was not covered as part of the SWNZ programme.

5.7 Chapter Summary

The content analysis undertaken within this chapter represents the first time that this method has been applied to a systematic search of international sustainable winegrowing websites. Fifty-three international sustainable winegrowing programmes were analysed, and the findings revealed that there were definite gaps with respect to the adoption of sustainable winegrowing practices at the industry level. The particular areas of concern that this content analysis indicated as being problematic existed in the areas of branding, biosecurity and the treatment of migrant workers. Also noted was a reluctance on the behalf of some of the sustainable winegrowing programmes towards communicating via the use of sustainability seals the existence of their programmes; there seem to be an attitude prevalent in terms of waiting for widespread adoption of programmes and mandates to occur before some programmes would allow the use of actual logos on wine bottles.

However, the content analysis did reveal commonalities which served as strong points when considering sustainable winegrowing programmes from a global perspective. Environmental issues which were strongly supported by the majority of programmes included water, waste and soil management, while climate change and biodiversity were also seen as important areas. Social justice issues that were noted as having a strong representation included being focused on the community, the areas of education and outreach, health and safety and training.

These issues were examined further within the survey component of this thesis and served to directly inform the new questions that were added to the previous survey templates. These questions provided the foundation used to identify the perceptions that existed amongst cool climate winegrowers towards sustainable winegrowing programmes.

Chapter 6

New Zealand findings

6.1 Chapter introduction

This chapter will highlight and discuss the findings of the 2015 New Zealand based survey and allow for longitudinal comparisons to occur with the available data sourced from the three previous New Zealand surveys that were conducted in 1997, 2003 and 2010 (Baird & Hall, 2012; Christensen et al., 1994; Hall & Johnson, 1998). The chapter itself is set out under the same headings as the survey and is divided into seven sections that cover the areas of winery profile, visitor profile, environmental issues, innovation, networks, cooperation, and tourism and marketing.

6.2 Winery profile

Location

Central Otago, Marlborough and Northland returned the most responses, with 17, 11 and 6 respectively. This indicates a shift from the 2010 survey where Marlborough, Central Otago and the Wairarapa/Martinborough regions returned the most responses. The 2003 iteration of the survey saw the Hawke's Bay region return the most responses followed by Marlborough and Central Otago. Wineries from all New Zealand wine regions returned responses to the 2015 survey.

Winery Age

The earliest planting of grapes according to respondents to the 2015 survey was in 1912, and the first commercial release of wine was reported to be in 1916.

First commercial release of wine amongst respondents

Based on responses to the 2015 survey the earliest year that an individual winery in this survey had first opened to the public was in 1916. When comparing results across the survey time series of when individual wineries had first opened to the public, in 1997 41.1 per cent of respondents stated that they first opened up their winery to the public in the four years preceding this particular survey. In the 2003 survey 12.5 per cent responded that they had first opened their winery to the public in 2000. In 2010 31.1 per cent had opened their winery within the four years previous to this survey. The 2015 survey showed a dramatic decrease in this area with only 4.6 per cent stating that they had first opened their winery in the four years prior to this survey. These figures indicate a clear maturing in the New Zealand industry. Another point of note in the 2015 survey is that 1998 was reported to be the year when the greatest number (9.2 per cent) of New Zealand wineries reported commercially releasing their wine in a single year. By 2008 this figure has halved to only 4.6 per cent.

Employees

The average number of full time, part-time and casual employees in the 2015 New Zealand survey echoed the variation exhibited in both the 2010 and the 2003 survey as seen in Table 6.1. However, the main difference to note is a decline in the average number of full time employees from 13 in 2010 to nine in 2015. The data available from the 1997 survey indicated that most producers reported employing six or less full-time employees.

The decline in full-time staffing levels in the 2015 survey from those exhibited in 2010 indicates potential issues for New Zealand wine tourism given that an increase in visitor numbers could compromise the ability of wineries to deliver a positive cellar door experience (Baird & Hall, 2012; Christensen et al. 2004; Frochot 2000, 2003; Hall & Johnson, 1998). This

has the potential to impact on the level of cellar door sales and the development of customer relationships. Cellar door sales are noted as important for smaller boutique wineries (Barker et al., 2001; Cohen & Ben-Nun, 2009; Getz & Brown, 2006; Mitchell & Hall, 2006). However, larger operations with a higher number of employees appear to be able to place less emphasis on cellar door sales as a source of revenue (Baird & Hall, 2012; Hall, 1996). The overall reduction in the average number of employees may also reflect wineries seeking to reduce employment costs given the increasingly competitive nature of the industry.

Table 6.1: Average number of employees in New Zealand based wineries 1997 - 2015

Employment basis	1997	2003	2010	2015
Full time employees	6	8	13	9
Part-time employees	n/a	5	3	3
Casual employees	n/a	18	9	9

Production levels

Production levels for New Zealand wineries indicated a wide variation in the 2015 survey with a minimum of 500 litres and a maximum of 7.5 million litres being reported. Median production for 2015 was 65,000 litres with a mean of 652,004 litres; in the 2010 survey median production for 2010 was 30,000 litres, with a mean of 250,070 litres. This was a notable increase on the 2003 figures, where a maximum of 1,400,000 litres was reported, and the mean production level was 120,934 litres. This finding also reflects the overall increase in New Zealand wine production over this period which went from 89 million litres produced in 2003 to 190 million litres produced in 2010. This 2010 figure then rose to 234 million litres in 2015 (NZ Wine, 2017).

Location of wine production

Eighty per cent of respondents stated in the 2015 New Zealand survey that their wine was made on site, which indicates a higher level of onsite production than what was reported in 2010 of 66 per cent (Baird & Hall, 2012) and the 2003 figure recorded of 67.2 per cent (Christensen et al., 2004). The shift in figures again likely reflect a maturing of the industry as onsite plant and infrastructure has been constructed.

Ownership status of New Zealand wineries

The ownership status of New Zealand wineries (Table 6.2) saw a rise in the number of respondents who reported that they were private companies (69.2 per cent compared with 34 per cent in 2010). This 2015 figure also surpasses that recorded in 2003 when 62.2 per cent of New Zealand participants indicated that their winery held the status of a private company. 12.3 per cent of New Zealand wineries stated that their winery was a partnership in the 2015 survey; this is a sharp decline from the figure of 37.9 per cent reported in 2010. 7.7 per cent stated that they were sole proprietors which marks a decline of 4.9 per cent from 12.6 per cent who declared this to be their ownership status in 2010.

Table 6.2. Ownership status of New Zealand wineries 1997 - 2015

	1997 (%)	2003 (%)	2010 (%)	2015 (%)
Sole proprietor	n/a	14.3	12.6	7.7
Public company	8.0	n/a	11.7	3.1
Partnership	n/a	12.6	37.9	12.3
Trust	n/a	n/a	1.9	6.2
Private company	92.0	62.2	34.0	69.2
Other	n/a	n/a	2.9	1.5

Turnover

53.8 per cent of New Zealand wineries stated that they received income in excess of \$NZ 750,000 over the 2014 tax year from the sales of all products and services. This percentage figure had risen from the 38.8 per cent reported in 2010 and the 28.3 per cent reported in the 2003 survey. 7.7 per cent reported that their income level was less than \$NZ 50,000 (down from 13.6 per cent in 2010 and the 2003 figure of 20.4 per cent). 6.1 per cent of New Zealand wineries preferred not to state their income levels in the 2015 survey. 1997 survey figures saw 51.6 per cent of wineries state that they earned less than \$NZ 250,000 annually, while 25 per cent earned over \$NZ 750,000 and 14.4 per cent earned less than \$NZ 50,000. This rise in numbers between 1997 and 2015 in the \$NZ 750,000 category is not necessarily indicative of an increase in real levels of income in New Zealand wine industry however and appears to reflect the results of inflation as well as shifts in overall number of wineries.

Distribution of New Zealand wine sales

When respondents were asked how wine sales figures were distributed (Table 6.3), the category “Export wine sales” ranked highest in 2015 with 39.3 per cent, up from second place in 2010 (33 per cent). “Other domestic wine sales” went from first place in the 2010 survey (36 per cent) to second place in the 2015 survey (34.3 per cent). Cellar door sales ranked third (13.2 per cent) up from fourth position in 2010 (14.2 per cent). Internet orders accounted for 4.9 per cent of sales, while postal mail order sales were reported as making up 5.7 per cent of sales. Accommodation was ranked last with just 2.6 per cent of reported sales, while other products and services contributed 5.6 per cent. From the previous survey data available, in 1997 it was noted that domestic wine sales accounted for 46 per cent of sales, while cellar door wine sales were reported at 20 per cent. When compared with the 2003, 2010 and 2015 figures this situation indicates that there is a steady decline in other domestic wine sales, while the decline

in cellar door sales appears to have stabilised from the trends observed in the 2010 and 2003 studies. This was after cellar door sales went from 20 per cent in 1997 to 14.9 per cent (a drop of 5.1 percentage points) in 2003.

The rate at which the decline in cellar door sales has slowed indicates that there is some evidence that winery owners are diversifying from relying too heavily on revenue derived from direct cellar door sales (Batra, 2008; Charters & O’Neill, 2001). Nevertheless, this shift in the focus of wineries illustrates the importance of reinforcement of the relationship between wineries and wine tourists (Alonso & O’Neil, 2009; Barber et al., 2008; Mitchell & Hall, 2006) through direct forms of communication such as websites and mailing lists (Christensen et al., 2004; Hall & Johnson, 1998) in order to increase post-cellar door visit sales revenue. Arguably, these results may therefore reflect a shift in how wine tourism is used by wineries in New Zealand from being a source of direct sales to one more focussed on customer relations, branding and generating greater market awareness.

Table 6.3: Distribution of New Zealand wine sales 1997 – 2015

Category	# 1997	% 1997	# 2003	% 2003	# 2010	% 2010	# 2015	% 2015
Other domestic wine sales	48	46.0%	47	38.7%	37	36.0%	53	34.3%
Export wine sales	n/a	n/a	38	31.2%	34	33.0%	60	39.3%
Cellar door wine sales	21	20.0%	18	14.9%	15	14.2%	20	13.2%
Internet order wine sales	n/a	n/a	n/a	n/a	4	3.8%	8	4.9%
Postal mail order wine sales	n/a	n/a	10	8.3%	6	6.1%	9	5.7%
Accommodation	n/a	n/a	2	1.4%	1	1.0%	4	2.6%
Other products and services	n/a	n/a	7	6.2%	6	6.1%	9	5.6%

Distribution of domestic wine sales

The category 'Other domestic wine sales' was broken down into the proportion of sales that occurred through local channels (Table 6.4). This was reported in 2015 as consisting of 19.3 per cent of sales occurring in supermarkets, 32.3 per cent in specialist wine stores, 4.4 per cent through wine clubs, and 38.3 per cent in restaurants. Farmers' markets accounted for 1.5 per cent of domestic wine sales, while other outlets made up the remaining 4.2 per cent of domestic wine sales. Compared with the 2010 survey, this response indicated that there was a reversal in the decline in sales through specialist wine stores (this figure was reported as 40.3 per cent in 2003, but in 2010 was reported as 27.3 per cent). Sales through supermarket chains and wine clubs both showed signs of growth in the 2015 results. No data for this question was available from the 1997 survey.

The rise in sales at specialist wine stores and supermarket chains in 2015 suggest that some New Zealand wineries have moved back towards selling through these distribution channels. This is of interest as the original trend reported in the 2010 survey which saw a move away from these forms of distribution due to the cost margins involved (Charters & O'Neill 2001). This suggests that the potential opportunities for wineries due to the lack of these marginal costs that the 2010 survey suggested may not have materialised which has led to less reliance being placed on revenue largely from direct sales to wine tourists at the cellar door.

Table 6.4: Distribution of New Zealand domestic wine sales 2003 -2015

Category	2003	2010	2015
Supermarkets	15.6%	15.9%	19.3%
Specialist wine stores	40.3%	27.3%	32.3%
Restaurants	29.6%	36.3%	38.3%
Wine clubs	2.1%	1.9%	4.4%
Farmers' markets	0.1%	1.8%	1.5%
Other outlets	6.5%	4.0%	4.2%

Note: Data from the 1997 survey was unavailable for this question.

6.3 Cellar door sales

In 2015, 81.5 per cent of respondent wineries offered cellar door sales to the public, which was an increase from 2010 (68 per cent) and a result similar to the 1997 figure (Table 6.5). The fluctuations in the availability of cellar door sales is potentially a reflection of the business turnover in smaller winegrowers and issues faced by winegrowers with respect to business strategies and engagement in tourism as a revenue stream. Significantly respondents without cellar doors available to the public could potentially be visited by appointment. In order to ascertain whether there were particular characteristics which differentiated those wineries which offered cellar door sales versus those that did not, an analysis was conducted in terms of region, winery size, whether wine was made on site, ownership status and annual turnover. Given other results in the survey noted above it is significant to note that the extent to which wineries engage in cellar door sales has remained high even though the extent of direct cellar door sales has dropped, reinforcing the notion that the use of wine tourism as a business strategy may have changed over time.

Table 6.5: Proportion of respondent wineries which offer cellar door sales

	# 1997	% 1997	# 2003	% 2003	# 2010	% 2010	#2015	% 2015
Offer	92	83%	80	66.4%	70	68%	53	81.5%
Do not offer	19	17%	41	33.6%	33	32%	12	18.5%
Total	111	100%	121	100%	103	100%	65	100%

Significant characteristics for cellar door sales

In order to ascertain whether there were particular characteristics which differentiated those wineries which offered cellar door sales versus those that did not, an analysis was conducted in terms of region, winery size, whether wine was made on site, ownership status and annual turnover (Table 6.6). The 2015 survey showed that no characteristics were significant at the .05 level for any of the New Zealand wineries that were surveyed. The data available from the 2010 survey showed that the only characteristic which was significant at the .05 level for wineries where cellar door sales were offered was the ownership status (Sig. = .035). Winery size was not a significant characteristic in either survey.

Table 6.6: Characteristics that define whether cellar door sales are offered

Characteristic	F (2010)	Sig. (2010)	F (2015)	Sig. (2015)
Region	.1456	.150	.156	.856
Winery Size	1.360	.150	.250	.779
Wine is made on site	2.874	.093	1.185	.313
Ownership status	2.507	.035	.097	.903
Annual turnover	.998	.431	1.323	.274

Significance level is measured at .05.

Cellar door sales importance to business

Based solely on those who responded to this statement with either extremely important or very important (Table 6.7), there was a decline in 2015 of 14.1 percentage points from the 57.2 per cent reported in 2010 when wineries were asked whether cellar door sales were important for their business. This decline had also been echoed in the 2010 survey where this figure was down 8.7 percentage points from 65.9 per cent reported in 2003. In the 1997 survey, 75 per cent of businesses stated that cellar door sales were important.

Table 6.7: Cellar door sales importance to business

Statement	Yes	#	%									
		1997	1997		2003	2003		2010	2010		2015	2015
Cellar door sales are important to my business	78	104	75.0%	54	82	65.9%	59	103	57.2%	28	65	43.1%

Intention to offer cellar door sales in the future

Only 1.5 per cent of New Zealand respondents indicated that they were intending to offer cellar door sales in the future (Table 6.8), which is down 13.1 per cent from the figure of 14.6 per cent reported in the 2010 survey. This 2010 figure was in itself down by 23.2 percentage points from 37.8 per cent reported in 2003, so a decline in the intention to offer cellar door sales is evident. In 1997, 41 per cent intended to offer cellar door sales in the future and 18 per cent did not, while 41 per cent stated that they already offered cellar door sales. 66 per cent of those surveyed in 2010 replied that they already offered cellar door sales. These figures suggest that the life course of wine tourism in New Zealand has reached an increasingly mature stage in its development.

Table 6.8: Intention to offer cellar door sales in the future

	# 1997	% 1997	# 2003	% 2003	# 2010	% 2010	# 2015	% 2015
Yes	7	7.6%	14	37.8%	15	14.6%	1	1.5%
No	3	3.8%	23	62.2%	20	19.4%	10	15.4%
Already offer cellar door sales	78	88.6%	-	-	68	66.0%	54	83.1%
Total	88	100.0%	37	100.0%	103	100.0%	65	100.0%

Tasting fee charges

In terms of tasting fees (Table 6.9), 76.9 per cent of New Zealand wineries stated that they did not charge tasting fees in the 2015 survey, which is a 2.1 per cent increase from the 2010 figure of 74.8 per cent. This 2010 figure was a notable increase of 9.2 per cent from the figure of 65.6 per cent reported in 2003. Given the small increase shown by the 2015 figure it would appear that this trend has stabilised.

In 1997, it was reported that just over half (52 per cent) of respondents charged tasting fees which most commonly cost \$NZ2 per head, and out of those producers who charged a tasting fee, all charged tasters in groups. Of those who charged tasting fees in the 2015 survey (23.1 per cent) the highest amount that was reported to be charged was \$NZD5. This is a decline from the 2010 survey where the highest amount that was reported to be charged by the 25.2 per cent of wineries who charged tasting fees was \$NZ8, and the most common amount charged per head was \$NZ5 (9.7 per cent reported this). If a winery did charge tasting fees, then in the 2015 survey full refunds were reported to be given on purchase by 73.1 per cent of respondents, and a partial refund was offered by 7.7 per cent. This is a slight increase on the 2010 figures

where a full refund upon purchase was offered by 70.9 per cent of respondents and a partial refund was offered to visitors by 6.8 per cent.

Table 6.9: Winery charges tasting fees

	# 1997	% 1997	# 2003	% 2003	# 2010	% 2010	# 2015	% 2015
Yes	53	51.0%	41	34.4%	26	25.2%	15	23.1%
No	51	49.0%	79	65.6%	77	74.8%	50	76.9%
Total	104	100%	121	100.0%	103	100.0%	65	100.0%

Wine availability to local consumers

81.5 per cent of respondents to the 2015 survey stated that their wines were available locally (Table 6.10), which is a decrease of 5.9 per cent from the 2010 figure where 87.4 per cent. In 1997, 97 per cent stated that their wine was available locally, while in 2003 this figure was stated as 91.9 per cent. Shifts in the availability of wines locally perhaps reflect the increased export focus of wineries.

Table 6.10: Wines are available locally (apart from cellar door sales)

	# 1997	% 1997	# 2003	% 2003	# 2010	% 2010	#2015	%2015
Yes	93	97.0%	111	91.9%	90	87.4%	53	81.5%
No	11	3.0%	10	8.1%	13	12.6%	12	18.5%
Total	104	100.0%	121	100.0%	103	100.0%	65	100.0%

Place of purchase for locally available wines

Table 6.11 shows that in the 2015 survey cafes and restaurants remained the main place where respondents' wines were locally available (recording 64.6 per cent in 2015, 81.5 per cent in 2010, 93.1 per cent in 2003 and 95 per cent in 1997). In the 2015 survey specialist wine stores ranked second (63.1 per cent) which is the same pattern that occurred in 2010 (68.9 per cent), and in 2003 (88.2 per cent). Supermarkets ranked third at 47.7 per cent, rising from fourth place

in the 2010 survey. The availability of wines in pubs, taverns and wine bars ranked fourth in 2015 (41.5 per cent); this was a decrease of 7 per cent from the 2010 figure (48.5 per cent).

Table 6.11: Places where wines produced can be purchased from if available locally

	#	%	#	%	#	%	#	%
	1997	1997	2003	2003	2010	2010	2015	2015
Cafes or restaurants	98	95.0%	112	93.1%	84	81.5%	42	64.6%
Pubs, taverns or wine bars	67	64.0%	49	40.0%	50	48.5%	27	41.5%
Supermarkets	n/a	n/a	72	59.8%	42	40.8%	31	47.7%
Specialist wine stores	n/a	n/a	107	88.2%	71	68.9%	41	63.1%
Accommodation houses	54	52.0%	39	32.4%	26	25.2%	14	21.5%
Other outlets*	n/a	n/a	5	4.0%	3	2.9%	6	9.2%

*Other outlets cited by respondents in the 2015 survey were charity events, wine clubs and duty-free outlets.

Products

From the range of products offered (Table 6.12), company branded merchandise was the most commonly offered product in 1997, 2003, 2010 and 2015, with 66 per cent, 71.3 per cent and 46.6 per cent and 42.6 per cent of responses respectively. Company branded promotional material was the second most cited product offered in 2015 (38.5 per cent), while regional promotional material ranked third at 32.5 per cent. This marks a change from the 2010 survey where regional merchandise ranked third (23.3 per cent); in the 2015 this category was in fifth place at 16.9 per cent. The 2015 survey indicates an increase in the amount of promotional material that was neither company branded nor regionally focused ranking third (29.2 per cent), which echoes the pattern of the 2003 survey. Other wine merchandise noted by as being offered by respondents in the 2015 survey (9.2 per cent) included gift packages, glasses, wine and food related product bundles, wine bags and wine-related books.

Table 6.12: Types of products offered

Type of product	# 1997	% 1997	# 2003	% 2003	# 2010	% 2010	# 2015	% 2015
Company branded merchandise	69	66.0%	86	71.3%	48	46.6%	30	46.2%
Regional merchandise	28	27.0%	16	13.8%	24	23.3%	11	16.9%
Regional promotional material	28	27.0%	16	13.8%	22	21.4%	21	32.3%
Promotional material	n/a	n/a	65	53.8%	34	33%	19	29.2%
Company branded promotional material	68	65.5%	66	55%	32	31.1%	25	38.5%
Other wine merchandise	36	35.0%	21	17.5%	5	4.9%	6	9.2%

Services and food

Table 6.13 compares what services were provided by respondents. In 2015 the most provided services on offer were wine tasting (64.6 per cent) followed by winery tours and hosting functions which were both at 38.5 per cent. This marks a change from the 2010 survey where winery tours ranked first (67 per cent) followed by wine tasting (59.4 per cent). Hosting functions ranked third in 2010 (51.1 per cent), while this position was occupied by vineyard tours in the 2015 survey (33.8 per cent). Restaurants ranked fourth (27.7 per cent) in the 2015 survey, which is the same ranking that occurred in the 2010 survey results. Compared to the 2003 survey the top two ranked services in 2015 maintained their positions. In the 1997 survey wine tasting was stated as the most commonly offered service (97 per cent) followed by winery tours (57 per cent) and vineyard tours (44 per cent).

Facilities

Picnic and entertainment areas ranked as the top facilities amongst New Zealand wineries in the 2015 survey results (Table 6.14) at 33.8 per cent. Barrel halls were ranked second (30.8 per cent), while winemaking demonstrations followed in third place (15.4 per cent). This represents a change from the 2010 survey results where the 'Other' category ranked as first (34.5 per cent), followed by barrel halls (19.6 per cent), while wine caves and picnic and entertainment areas ranked third equal at 18.4 per cent each. Responses to the 'Other' category in 2015 New

Zealand survey results cited concert facilities, art displays and farm access as onsite facilities that were also available.

Table 6.13: Services and food

Service	% 1997	Ranking 1997	% 2003	Ranking 2003	% 2010	Ranking 2010	% 2015	Ranking 2015
Wine tasting	93.0%	1	91.1 %	1	59.4%	2	64.6%	1
Winery tours	57.0%	2	50.6%	2	67.0%	1	38.5%	2 =
Tasting or snack food	21.0%	6	40.5%	3 =	39.5%	6	26.2%	5
Events/festivals	-	-	40.5%	3 =	46.9%	5	21.5%	6
Vineyard tours	44.0%	3	39.2%	4	37.2%	7	33.8%	3
Host functions	26.0%	5	38.0%	5	51.1%	3	38.5%	2 =
Restaurant	32.0%	4	25.3%	6	50.0%	4	27.7%	4
Host Conferences	11.0%	8	22.8%	7	30.6%	9	13.8%	8
Accommodation	7.0%	10	15.2%	8	35.7%	8	15.4%	7
Entertainment	20.0%	7	7.6%	9	26.9%	10	12.3%	9
Other services or food services	8.0%	9	3.8%	10	24.0%	11	9.2%	10

Table 6.14: Facilities

Facilities	% 1997	Ranking 1997	% 2003	Ranking 2003	% 2010	Ranking 2010	% 2015	Ranking 2015
Picnic entertainment area	53.0%	1	56.3%	1	18.4%	3 =	33.8%	1
Barrel hall	28.0%	3	43.8%	2	19.6%	2	30.8%	2
Conference facilities	13.0%	5	28.1%	3	10.7%	6	10.8%	5 =
BBQ area	29.0%	2	26.6%	4	14.3%	5 =	12.3%	4 =
Children's playground	16.0%	4	23.4%	5	16.7%	4	10.8%	5 =
Wine cave	10.0%	6	7.8%	6 =	18.4%	3 =	12.3%	4 =
Winemaking demos	8.0%	7 =	7.8%	6 =	14.3%	5 =	15.4%	3
Historical displays	8.0%	7 =	7.8%	6 =	0.10%	7	12.3%	4 =
Other facilities	6.0%	8	7.8%	6 =	34.5%	1	9.2%	6

Services for people who have disabilities

Wheelchair access

Table 6.15 illustrates that in terms of services for the disabled and shows that in 2015 the most common form of wheelchair access available in New Zealand wineries was to the toilet facilities (56.9 per cent) followed by the tasting room (50.8 per cent). Wheelchair access to the restaurant/bar, which ranked fourth in 2010 ranked as third in the 2015 survey (30.8 per cent), while access to the winery ranked fourth (32.3 per cent). Of note here is that wineries were least likely to offer wheelchair access to their actual vineyard (24.6 per cent). Meeting the needs of disabled patrons appears to be reasonably well catered for by New Zealand wineries when it comes to both tasting room and toilet facilities. However, the fact that vineyard access was stated as the least likely area where disabled access is available is an issue which needs to be addressed; failure to do so could risk in losing customers (Beames, 2003; Myles & Filan, 2019).

6.15 Wheelchair access

Statement	Yes 1997	% 1997	Yes 2003	% 2003	Yes 2010	% 2010	Yes 2015	% 2015
Wheelchair access to tasting room	72	69.0	65	81.3	61	59.2	33	50.8
Wheelchair access to winery	48	46.0	40	50.0	34	33.0	21	32.3
Wheelchair access to vineyard	43	41.0	27	33.8	32	31.1	16	24.6
Wheelchair access to restaurant/wine bar	31	30.0	27	33.8	24	23.3	20	30.8
Wheelchair access to toilets	55	53.0	56	70.0	61	59.2	37	56.9
Total no. respondents to question	104		80		103		65	

Services for people who have visual or hearing impairments

Overall the level of services for people with hearing or visual impairments remains low, with 6.2 per cent of wineries in 2015 reporting that they offered services for visitors who suffered from visual impairments or hearing difficulties. There has been very little change since the 2010 survey where a four percent point drop between the 2003 and 2010 surveys was reported with the figure of 9.8 per cent in 2003 dropped to 5.8 per cent. No data from the 1997 survey was available for this question.

6.4 Visitor profile

The following are New Zealand wineries' perceived visitor attributes in terms of age, gender and origin.

Perceived age breakdown

Table 6.16 provides an illustration of the perceived breakdown of the age of winery visitors. The 2015 survey results reported that the highest number of visitors was in the 50-59 year age group (25.6 per cent), which is a change from previous trends exhibited in the 1997, 2003 and 2010 New Zealand surveys where the highest number of visitors was reported to be in the 30-39 year age bracket. In the 2015 survey this category has now dropped from first to third position (20.2 per cent), while the 40-49 year age group (21.3 per cent) maintained their ranking of second position in the 2015 survey. The category of 60 years plus ranked in fourth position at 16.4 per cent. Wine tourism amongst those within the 18-29 age group fell to from third place in 2010 to fifth place in 2015, where the 16.4 per cent figure reported was down slightly from the 17.7 per cent figure reported in the 2010 survey.

Table 6.16: Perceived age breakdown for New Zealand wineries 1997 - 2015

Age group	1997 (%)	2003 (%)	2010 (%)	2015 (%)
Under 18 years	2.00	1.50	1.0	0.00
18-29 years	21.0	15.1	17.7	16.4
30-39 years	28.0	28.2	32.4	20.2
40-49 years	25.50	24.0	23.0	21.3
50-59 years	16.0	21.1	15.4	25.6
60 years +	7.5	10.1	9.7	16.5

Perceived gender breakdown for New Zealand wineries

As Table 6.17 shows, in the 1997, 2003, 2010 and 2015 surveys there was roughly a 50/50 split reported between New Zealand winery visitors in terms of gender.

Table 6.17: Perceived gender breakdown for New Zealand wineries 1997-2015

	1997 (%)	2003 (%)	2010 (%)	2015 (%)
Male	50.0	51.0	48.6	48.1
Female	50.0	49.0	50.4	51.9

Perceived visitor origin breakdown for New Zealand wineries

Table 6.18 shows that in 2015 domestic visitors accounted for 58.4 per cent of visitors to New Zealand wineries, while 41.6 per cent were from overseas. A trend can be observed across the first three surveys of a growth in the number of international visitors, which has gone from 18.1 per cent in 1997 to 32.3 per cent in 2003. This trend continued to rise to 43 per cent in 2010 before declining slightly in the 2015 survey where the figure for international visitors was reported as 41.6 per cent. However, the perceived percentage of domestic visitors dropped from 81.9 per cent in 1997 to 67.7 per cent in 2003. The 2010 survey noted a further 10.7 per cent decline in this figure to 57 per cent, while the 2015 survey reported a 1.4 per cent increase from this figure to 58.4 per cent. With international visitors to New Zealand in 2018 recorded at 3,790,505 (Statistics New Zealand, 2018), this growth in New Zealand wine tourism from

overseas visitors is encouraging even though when compared to overseas currencies the New Zealand dollar still remains relatively high.

Table 6.18: Perceived visitor origin of New Zealand wine tourists 1997-2015

	1997 (%)	2003 (%)	2010 (%)	2015 (%)
Domestic	81.9	67.7	57.0	58.4
International	18.1	32.3	43.0	41.6

Wine tour visitation for New Zealand wineries

Examining wine tour visitation at New Zealand wineries (Table 6.19) in the 2015 survey found that the main source of visitors was local tour operators (47.7 per cent) who had previously ranked second in 2010. Commercial wine tours ranked in second place and were cited as being used by 44.6 per cent of respondents in 2015, down by 15.2 per cent from the 59.8 per cent figure reported in the 2010 New Zealand survey. Self-guided tours maintained their ranking in third position (reported as 27.7 per cent in 2015 up from 23.7 per cent in 2010). Of interest here is that the drop first reported in the 2010 New Zealand survey of the number of travel companies who incorporate wineries in their itinerary in the 2010 survey (17.5 per cent) continued to decline with a figure of only 13.8 per cent reported in 2015.

Visitor information collection methods for New Zealand wineries

Based on those who responded with a ‘yes’ to this question, the most common visitor information collection methods listed by New Zealand respondents (Table 6.20) in 2015 were other methods (40 per cent). Those who chose this option reported maintaining a visitor comments book, counting visitors as they came in, and using sales records to record visitor information as being their preferred methods to collect visitor information. Having no systematic way of collection in place (35.4 per cent) ranked second, followed by using till receipts and counters (both reported at 32.3 per cent each).

Table 6.19: Wine tour visitation for New Zealand wineries 1997 - 2015

Statement	Yes 1997	# 1997	% 1997	Yes 2003	# 2003	% 2003	Yes 2010	# 2010	% 2010	Yes 2015	# 2015	% 2015
Commercial tours visit	47	104	45.0%	48	92	52.1%	49	82	59.8%	29	65	44.6%
Self-guided tours visit	44	104	42.0%	20	52	38.5%	18	76	23.7%	18	65	27.7%
Local tour operators visit	89	104	86.0%	52	69	75.0%	49	95	51.6%	31	65	47.7%
Travel companies visit	34	104	33.0%	18	52	34.6%	18	97	17.5%	9	65	13.8%

Table 6.20: Visitor information collection methods

Method	Yes 1997	# 1997	% 1997	Yes 2003	# 2003	% 2003	Yes 2010	# 2010	% 2010	Yes 2015	# 2015	% 2015
No systematic way	49	84	58.0%	34	83	41.0%	31	91	34.1%	23	65	35.4%
Mailing list	53	84	63.0%	27	82	32.9%	25	99	25.3%	19	65	29.2%
Surveys	-	-	-	10	82	12.2%	19	85	22.4%	5	65	7.7%
Till receipts	24	84	29.0%	27	82	34.1%	15	96	15.6%	21	65	32.3%
Counters	12	84	14.0%	11	82	13.4%	13	92	12.6%	21	65	32.3%
Other methods	-	-	-	14	83	16.9%	12	97	12.4%	26	65	40.0%

Reasons for visitation of New Zealand wineries 1997 – 2015

Table 6.21 shows that there were a variety of reasons given for winery visitation. Buying wines ranked first in 2015 for New Zealand wineries (70.8 per cent), followed by tasting wines (64.4 per cent) which is a reversal of the top two rankings from the 2010 survey. Learning about wines ranked in third position (33.8 per cent), which was the same position that this reason achieved in the 2010 survey results. Socialising and a day out were fourth equal at 27.7 per cent; this ranking replaced meeting the winemaker which was formerly the fourth most important reason in 2010, and was in now in fifth equal position with the category of relaxation in the 2015 survey at 18.5 per cent. Other reasons cited by respondents in 2015 included attending corporate functions and visiting a restaurant that was attached to the winery itself.

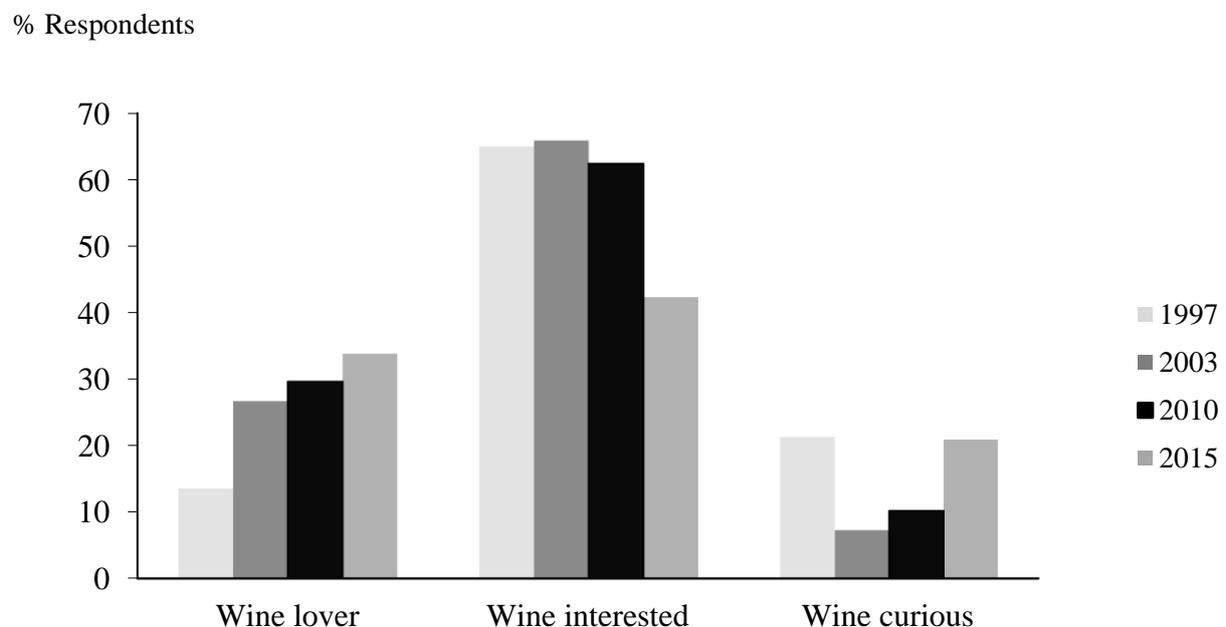
Table 6.21: Reasons for visit

Reason	# 1997	% 1997	Rank 1997	# 2003	% 2003	Rank 2003	# 2010	% 2010	Rank 2010	# 2015	% 2015	Rank 2015
Tasting wines	68	84.0%	1	75	91.5%	1	76	98.7%	1	42	64.4%	2
Buying wines	67	80.0%	2	68	82.9%	2	74	71.8%	2	46	70.8%	1
Learning about wines	38	46.0%	4	47	57.3%	3	38	36.9%	3 =	22	33.8%	3 =
A day out	44	54.0%	3	39	47.6%	4	38	36.9%	3 =	18	27.7%	4 =
Socialising	20	24.0%	7	34	41.5%	5	22	21.4%	7 =	18	27.7%	4 =
Winery tour	29	34.0%	6	26	31.7%	6	19	18.4%	9	22	33.8%	3 =
Meeting the winemaker	19	23.0%	8	23	28.0%	7	28	27.2%	5	12	18.5%	5 =
Relaxation	31	38.0%	5	21	25.6%	8	24	23.3%	6	12	18.5%	5 =
Festivals or events	15	18.0%	9	14	17.1%	9	22	21.4%	7 =	6	9.2%	7
Organic wines	-	-	-	6	7.3%	10 =	6	5.8%	11	12	18.5%	5 =
Other	5	6.0%	10	6	7.3%	10 =	14	13.6%	10	9	13.8%	6 =

Visitor attributes

Based on Hall's (1996) tripartite typology, visitor market segmentation figures (Figure 6.1) in the 2015 survey listed the majority of New Zealand winery visitors as 'Wine interested' (42.4 per cent) followed by those visitors who were categorised as 'Wine lovers' (33.9 per cent). Third ranking went to those visitors who were regarded as 'Wine curious' (21.9 per cent). This trend was also noted in the 2010 and 2003 surveys, while the 'Wine curious' segment ranked second in the 1997 results. The results suggest that over time there has been shifts in the profile of winery visitors. Hall's (1996) tripartite typology used in this section has also served inform other wine tourism research studies (Charters & Ali-Knight, 2001; Christensen et al., 2004; Hall & Johnson, 1997; Houghton, 2008) which have also attempted to look into characteristics based on the attributes of winery visitors.

Figure 6.1: Visitor market segments 1997-2015



Benefits of information on visitor numbers and characteristics for New Zealand wineries

73.8 per cent of New Zealand wineries in the 2015 survey believed that information on visitor numbers and characteristics was of benefit to their business. This figure represents a rise of 24.3 per cent from 49.5 per cent who gave a positive response to this question in 2010. It also shows a marked increase from the 2003 survey figure of 50.4 per cent and the 1997 figure 65 per cent. This shows that New Zealand wineries definitely recognise the value that collecting visitor information can provide in terms of enabling them to successfully target their marketing towards wine tourists. The forms of data collected by participants in the 2015 survey to record data were detailed in Table 6.20.

6.5 Sustainability

Importance of sustainability practices for the New Zealand wine industry

Figure 6.2 shows that over half of the respondents in the 2015 survey strongly disagreed (50.8 per cent) or disagreed (30.8 per cent) that sustainability practices are important for the New Zealand wine industry. This is an important point as based on the 2010 figures where the majority of respondents either agreed (33 per cent) or strongly agreed (21.4 per cent) the 2015 figures indicate a strong reversal in the viewpoint taken by the New Zealand wine industry towards the value of sustainable practices for the local industry.

In contrast to the position of New Zealand Winegrowers over half of respondents in 2010 did not believe that sustainability practices provided wineries with a source of competitive advantage (refer to Figure 6.3). This position appears to have changed in 2015 with 30.8 per

cent of wineries now agreeing that sustainability provides an important source of competitive advantage, however 24.6 per cent still disagreed, while 20 per cent of wineries remained unsure. This shows that even in the latest iteration of this survey that opinions amongst New Zealand wine producers are still very much divided over the true value of sustainability practices for the New Zealand wine industry.

Figure 6.2: Sustainability practices are important for the New Zealand wine industry

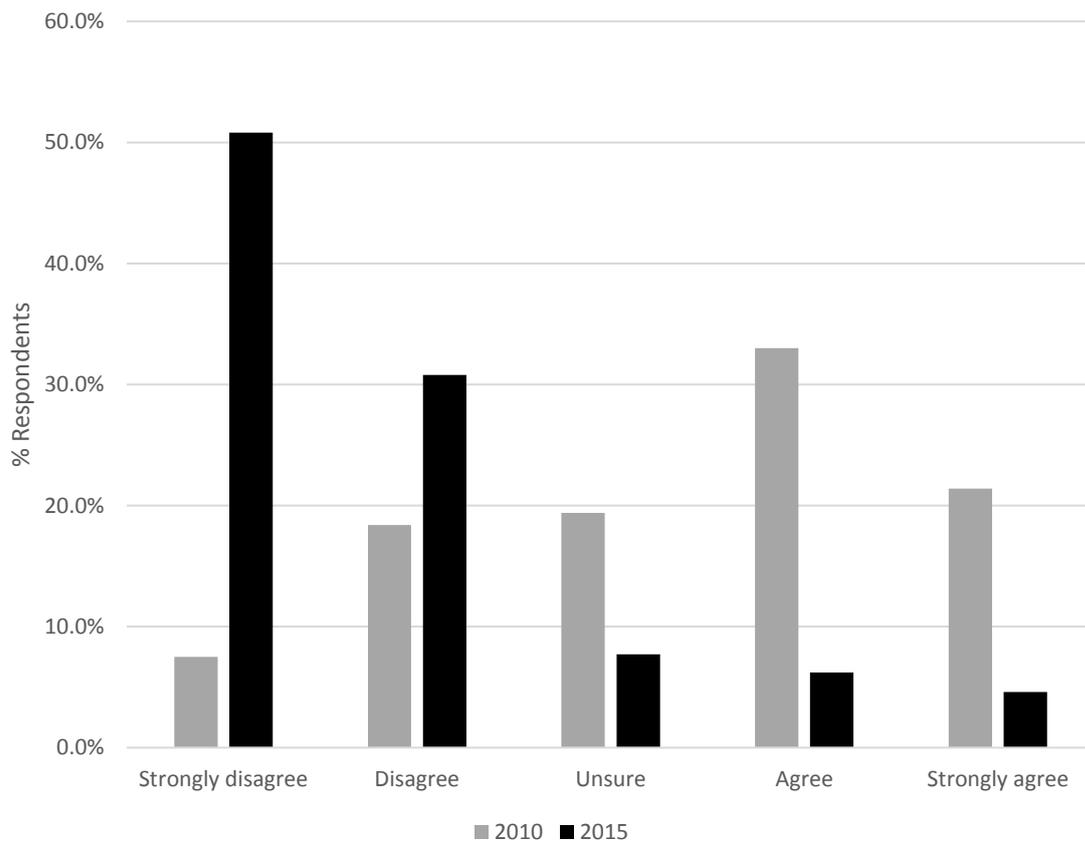
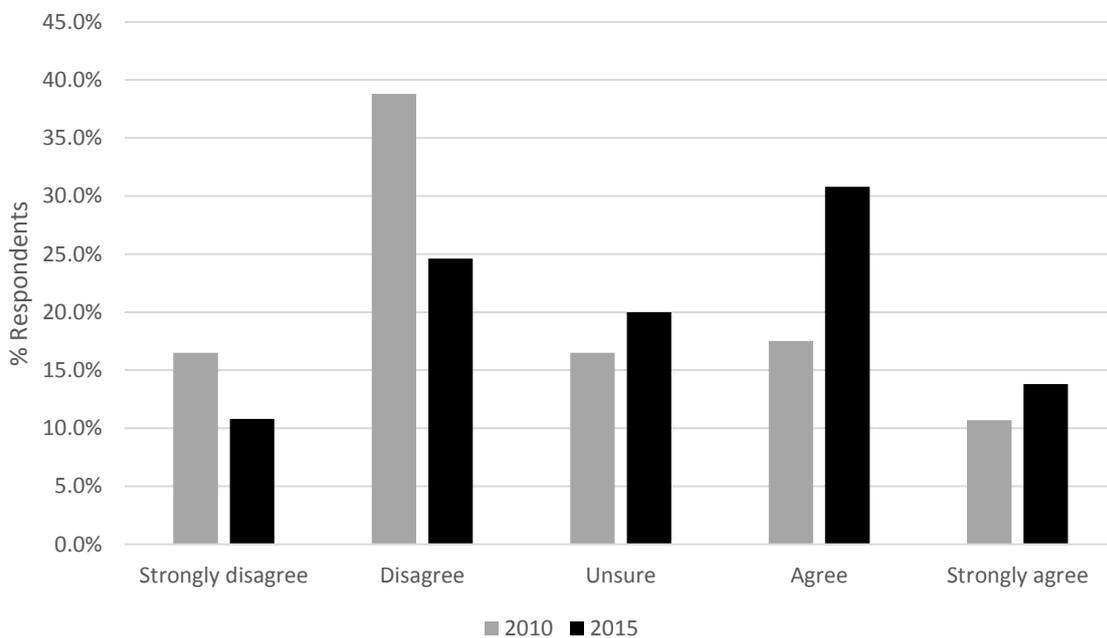


Figure 6.3: Sustainability practices provide an important source of competitive advantage



SWNZ certification and winery commitment to sustainability

78.5 per cent of wineries surveyed in 2015 stated that they were certified members of the SWNZ; this is an increase on the figure of 56.3 per cent of wineries who stated that they were certified members in 2010. These figures speak volumes about the seeming disparity between the vision of SWNZ of 100 per cent industry uptake of their program (a goal that they originally had hoped to achieve by 2012). The reality is that some wineries simply appear to either not see any true value being gained through certification, or mistrust the ability of SWNZ to be able to follow through on delivering the strategic intent on which this scheme is based. When asked about the level of commitment that their winery had toward sustainability 93.8 per cent of participants responded that they had already adopted sustainable practices, while 3.1 per cent stated that they were planning to adopt sustainable practices but were not ready yet. The remaining 3.1 per cent of respondents reported that they were not interested in adopting sustainable practices.

Impact of sustainability issues on New Zealand wineries

In order to examine the impact that sustainability issues were having on New Zealand wineries a series of statements which focused on how their organisation defines sustainability. Participants were presented with a series of questions that were based around a five-point Likert scale (1=No impact, 5= Major impact). The first set of topics covered included climate change, corporate social responsibility, business viability and whether they felt that sustainability incorporated the three elements of climate change, environmental, social and economic issues. The second set of topics examined whether wineries felt that sustainability meant meeting the needs of the current generation without compromise, or referred to biodiversity, social justice or other wider environmental issues. A final question asked whether wineries felt that sustainability referred to addressing issues from a long-term perspective. All results referred to in this section are summarised in Table 6.22.

Climate change

Table 6.22 shows that New Zealand wineries were divided over their perception of the impact of climate change issues on their organisation defined sustainability. 44.6 per cent of wineries stated that climate change had little impact while 24.6 per cent responded that they believed that climate change had no impact at all. 27.6 per cent, however, responded that they recognised climate change issues as having a major effect. A further 18.5 per cent said that this area had some impact, while the remaining 9.2 per cent of participants felt that climate change had a lot of impact within the context of their reasoning for pursuing sustainable business practices.

Corporate social responsibility

Sustainability was seen as having a major impact on corporate social responsibility with 30.8 per cent of wineries selecting this option; a further 29.2 per cent stated that a lot of impact through the application of sustainable practices was seen in this area. However, 23.1 per cent indicated that they perceived there to be no impact, while 10.8 per cent reported that corporate social responsibility had little impact on their business in terms of sustainability. The remaining 6.2 per cent declared that there was some impact in their business operations within this domain.

Business viability

Sustainability was viewed as having a major impact on business viability by 38.5 per cent of participants. 21.5 per cent stated that it had no impact whatsoever, while 16.9 per cent deemed that a lot of impact was caused. A further 15.4 per cent stated that some impact had been experienced by their winery; the remaining 7.7 per cent indicated that little impact was observed on the viability of their organisation.

Sustainability incorporates climate change, environmental, social and economic issues

New Zealand wineries felt that the combination of climate change, environmental, social and economic issues was important to them, with 60 per cent stating that this had a major impact on their business. 18.5 per cent reported that they felt that these issues had a lot of impact, while 10.8 per cent said that some impact had taken place at their winery. 7.7 per cent declared that no impact had been felt, while the remaining 3.1 per cent of New Zealand respondents stated that little impact had been seen to occur.

Sustainability meets the needs of the current generation without compromise

50.8 per cent of wineries felt that not compromising on sustainable practices to meet the needs of the current generation was of major impact to how they ran their organisation. 16.9 per cent also believed that this had a lot of impact, 12.3 per cent responded that some impact was felt, and 4.6 per cent declared that this had caused little impact on their winery. 15.4 per cent of participants declared that meeting the needs of the current generation had been of no consequence, and as a result no impact had been made by this issue on their view of sustainability.

Sustainability refers to biodiversity issues

Biodiversity was regarded as having a major impact within the context of organisational definitions of sustainability by 32.3 per cent of survey participants. 29.2 per cent reported that they also believed that this area had a lot of impact, while 13.8 per cent stated that some impact was experienced by their winery. On the other end of the spectrum 10.8 per cent of respondents stated that the issue of biodiversity had little impact of how their winery perceived sustainability, while the remaining 13.8 per cent of those surveyed indicated that they believed that no impact had occurred on their business through taken biodiversity into account.

Sustainability refers to social justice issues

The opinions of New Zealand wineries were clearly divided over whether social justice issues served to inform how their organisation defined sustainability. 35.4 per cent of wineries stated that social justice issues had no impact at all, while 27.7 per cent declared that the same topic had a lot of impact on their winery. 13.8 per cent of New Zealand respondents believed that social justice issues had some impact on their business, while 12.3 per cent reported that little

impact had occurred in terms of their sustainable practices. The remaining 10.8 per cent, however, asserted that social justice issues had a major impact on how they viewed the importance of sustainability.

Sustainability refers to other environmental issues

49.2 per cent of New Zealand wineries viewed other environmental issues outside of those related to climate change as having a major impact on their organisational definition of sustainability. 29.2 per cent stated that they perceived these issues to have a lot of impact; 4.6 per cent of New Zealand respondents stated that there had been some impact on their winery, while 16.9 per cent declared that there had been no impact at all on their perspective regarding sustainable practices. No New Zealand wineries chose the option of stating that these issues had caused little impact on their business.

Sustainability refers to addressing issues from a long-term perspective

Addressing issues by taking a long-term viewpoint was cited by 50.8 per cent of wineries having a major impact; a further 20 per cent of respondents, however, did state that they felt that taking such a perspective had no impact on their business. 12.3 per cent of New Zealand wineries reported that a lot of impact was brought on their business practices by taking a long-term vision with regards to sustainability. 9.2 per cent believed that taking such a stance caused some impact on their winery, while the remaining 7.7 per cent stated that little impact had been experienced by adopting a long-term perspective.

Table 6.22: New Zealand wineries definition of sustainability

How organisation defines sustainability	No impact	Little impact	Some impact	A lot of impact	Major impact	Mean
Refers to climate change	24.6%	44.6%	18.5%	9.2%	27.7%	2.95
Refers to corporate social responsibility issues	23.1%	10.8%	6.2%	29.2%	30.8%	3.34
Refers to maintaining the viability of the business	21.5%	7.7%	15.4%	16.9%	38.5%	3.43
Incorporates climate change, environmental, social and economic issues	7.7%	3.1%	10.8%	18.5%	40.0%	4.20
Refers to meeting the needs of the current generation without compromise	15.4%	4.6%	12.3%	16.9%	50.8%	3.83
Refers to biodiversity issues	13.8%	10.8%	13.8%	29.2%	32.3%	3.55
Refers to social justice issues	35.4%	12.3%	13.8%	27.7%	10.8%	2.66
Refers to environmental issues	16.9%	0.0%	4.6%	29.2%	49.2%	3.94
Refers to addressing issues from a long-term perspective	20.0%	7.7%	9.2%	12.3%	50.8%	3.66

Table 6.23 shows how New Zealand wineries define sustainability based around the same issues covered in Table 6.22. The key difference here is that Table 6.23 frames these issues from the perspective of whether survey respondents are certified SWNZ members or not. The results show significance at the .05 level for corporate responsibility issues ($t = 1.508$, $\text{sig.} = .031$) and the holistic focus of climate change, environmental, social and economic issues ($t = 1.120$, $\text{sig.} = .006$). Solely focusing on environmental issues ($t = 1.607$, $\text{sig.} = .008$) was also significant at the .05 level.

Table 6.23: New Zealand wineries definition of sustainability based on SWNZ certification

How organisation defines sustainability	t	Sig.
Refers to climate change	.843	.157
Refers to corporate social responsibility issues	1.508	.031
Refers to maintaining the viability of the business	1.351	.416
Incorporates climate change, environmental, social and economic issues	1.120	.006
Refers to meeting the needs of the current generation without compromise	1.147	.130
Refers to biodiversity issues	1.022	.412
Refers to social justice issues	.872	.689
Refers to environmental issues	1.607	.008
Refers to addressing issues from a long-term perspective	.233	.530

Significance is measured at the .05 level.

Table 6.24 examines the same issues based on wineries' level of commitment towards sustainability. This analysis used the three levels based on individual wineries' commitment towards sustainability (refer to page 214). This three levels were where wineries had already adopted sustainable practices, were planning to adopt sustainable practices but had not ready yet done so, or were not interested in adopting sustainable practices. The results show significance at the .05 level for meeting the needs of the current generation without compromise.

Table 6.24: New Zealand wineries definition of sustainability based on level of commitment

How organisation defines sustainability	F	Sig.
Refers to climate change	.177	.838
Refers to corporate social responsibility issues	.219	.804
Refers to maintaining the viability of the business	.529	.592
Incorporates climate change, environmental, social and economic issues	2.090	.132
Refers to meeting the needs of the current generation without compromise	3.329	.042
Refers to biodiversity issues	1.281	.285
Refers to social justice issues	.251	.779
Refers to environmental issues	.428	.654
Refers to addressing issues from a long-term perspective	2.971	.59

Significance is measured at the .05 level.

Importance of sustainability practices for New Zealand wineries

In this part of the survey participants were asked to respond to a series of statements based on the level of importance that they perceived the topics concerned had for sustainable practices at their winery. Statements were asked utilising a five-point Likert scale (1=Not at all important, 5= Extremely important) and focused on the areas of employee recruitment, morale and retention, obtaining greater operational efficiency, improving customer loyalty and the ability for wineries to enter new markets. Further statements were asked based on migrant workers' rights, the provision of more revenue sources, the ability to justify a price premium for products, attracting winery visitation and lowering legal and regulatory risk. All results referred to in this section are summarised in Table 6.25.

Importance of sustainability on obtaining a stronger brand with greater pricing power

The pursuit of a stronger brand with greater pricing power through employing sustainable practices was viewed as being no importance by 29.2 per cent of New Zealand wineries. 23.1 per cent stated that obtaining these goals was somewhat important; a further 16.9 per cent stated that achieving an advantage in terms of brand strength and price as important to their winery. 16.9 per cent of respondents also chose to report that they viewed this topic as being extremely important, while the remaining 13.8 per cent of New Zealand wineries indicated that they felt this area was very important for their winery.

Importance of sustainability on employee recruitment, morale and retention

Of interest here is that 27.7 per cent of New Zealand wineries viewed the importance of sustainability on employee recruitment, morale and retention as not being important. However, on the opposing end of the scale 24.6 per cent of New Zealand wineries indicated that they felt that these three areas were important; 18.5 per cent of respondents felt it was very important, while 15.4 per cent of respondents regarded these three topics were important within the context of sustainability.

Importance of sustainability on obtaining greater operational efficiency

The majority of New Zealand survey respondents viewed sustainability as being an important factor in achieving greater operational efficiency. 24.6 per cent stated that this was very important, while 23.1 per cent felt that it was issue was important. 23.1 per cent, however, also stated that greater operational efficiency through sustainable practices was not important to their winery. 16.9 per cent indicated it was somewhat important, while the remaining 12.3 per

cent of New Zealand respondents stated that it was extremely important to their sustainable business endeavours.

Importance of sustainable practices for improving customer loyalty

30.8 per cent of New Zealand wineries viewed sustainability as being important in order to attract improved customer loyalty, 16.9 per cent stated it was very important, and 12.3 per cent felt it was extremely important. There was some division over this topic for New Zealand wineries however, with 27.7 per cent stating improving customer loyalty through the use of sustainable practices was not important. The remaining 12.3 per cent of New Zealand respondents labelled customer loyalty as being only somewhat important to their winery.

Importance of sustainable practices on the ability to enter new markets

A significant division of opinion was also evident amongst wineries when considering whether sustainable practices facilitated entry into new markets. 30.8 per cent felt that these practices were important, while 29.2 per cent of respondents reported that they were not important at all. 20 per cent of wineries indicated that sustainability was very important for new market entry, while a further 12.3 per cent regarded it as extremely important. Only 7.7 per cent responded that they believed that the enhanced ability to enter new markets was somewhat important to them.

Importance of sustainable practices in terms of migrant workers' rights

The issue of migrant workers' rights appeared to be fairly low on the list of priorities for the New Zealand wineries. 47.7 per cent of survey respondents indicated that they felt that this issue was not important in terms of sustainable practices. 26.2 per cent reported that they felt that this issue was important, while 13.9 per cent responded that they perceived this issue to be somewhat important. Only 7.7 per cent of wineries stated that it was extremely important, while

the remaining 4.6 per cent of wineries asserted that migrant workers' rights was a very important topic in terms of how they viewed sustainability.

Importance of sustainable practices for providing more potential sources of revenue

The ability of sustainable practices to provide further potential sources of revenue for wineries was viewed with scepticism by a majority of wineries. 43.1 per cent stated that this was not important, while 15.4 per cent reported that it was somewhat important. 21.5 per cent believed it was an important factor for their business, while only 12.3 per cent felt it was extremely important. Only 3.1 per cent indicated that they felt that sustainable practices were very important in terms of attracting additional sources of revenue.

Importance of sustainable practices for lowering financial and operating risk

Sustainable practices were viewed with caution when wineries were asked if they were key to lowering the financial and operating risk that New Zealand wineries may experience. 43.1 per cent of respondents stated that this was not important to them, and 15.4 per cent regarded it as somewhat important. 21.5 per cent reported that they considered the role of sustainability was important in this regard, while 10.8 per cent said it was extremely important. 9.2 per cent stated that they felt the importance of sustainable practices for lowering these two types of risk was very important.

Importance of sustainable practices on the ability to justify a price premium for products

The desire to use sustainable practices as a justification for applying a price premium in the marketplace was viewed as being important by 36.9 per cent of New Zealand survey respondents. 23.1 per cent felt that sustainability derived price premiums were not important, while 18.5 per cent expressed that they felt that this approach was somewhat important. Of the remaining New Zealand respondents 13.8 per cent felt that sustainable practices had an

extremely important role to play in this area, while the remaining 7.7 per cent reported that they felt that this role was very important for their winery.

Importance of sustainable practices on attracting winery visitation

New Zealand wineries appeared to have broad range of viewpoints when considering whether sustainable practices were important for attracting winery visitation. 36.9 per cent of respondents indicated that they felt that sustainable practices were important in this regard; however, 30.8 per cent also felt that sustainable practices were not all important in terms of attracting wine tourists. 16.9 per cent stated that this aspect of their business practice was important, while 7.7 per cent respectively stated that it either very important or extremely important to their winery.

Importance of sustainable practices on lowering legal and regulatory risk

Having the ability to lower levels of legal and regulatory risk produced a diverse range of response from New Zealand wineries. The greatest number of responses featured in the 'not important' category (27.7 per cent). 23.1 per cent felt that that that the impact of sustainable practices in this domain was important, while 20 per cent felt that it was somewhat important. The notion that the impact of sustainable practices on lowering legal and regulatory risk was very important was supported by 18.5 per cent of respondents, while the remaining 10.8 per cent of respondents felt that the impact of sustainable practices were extremely important in this regard.

Table 6.25: Importance of sustainability practices for New Zealand wineries

Sustainability practice	Not important	Somewhat important	Important	Very important	Extremely important	Mean
Stronger brand/greater pricing power	29.2%	23.1%	16.9%	13.8%	16.9%	2.66
Employee recruitment, morale and retention	27.7%	13.8%	24.6%	18.5%	15.4%	2.80
Greater operational efficiency	23.1%	16.9%	23.1%	24.6%	12.3%	2.86
Improved customer loyalty	27.7%	12.3%	30.8%	16.9%	12.3%	2.74
Enhanced ability to enter new markets	29.2%	7.7%	30.8%	20.0%	12.3%	2.78
Migrant workers' rights	47.7%	13.8%	26.2%	4.6%	7.7%	2.11
More potential sources of revenue	35.4%	21.5%	27.7%	3.1%	12.3%	2.35
Lower financial and operating risk	43.1%	15.4%	21.5%	9.2%	10.8%	2.29
Ability to justify price premium for products	23.1%	18.5%	36.9%	7.7%	13.8%	2.71
Attracting visitors to winery	30.8%	16.9%	36.9%	7.7%	7.7%	2.44
Lower legal and regulatory risk	27.7%	20.0%	23.1%	18.5%	10.8%	2.65

When statistical analysis using an ANOVA was conducted on the data presented in Table 6.23 based on both SWNZ certification and level of commitment towards sustainability no issues were found to be significant at the .05 level for SWNZ certified businesses.

Potential benefits of sustainability practices for New Zealand wineries

Respondents were asked to state whether there were potential benefits for employing sustainable practices at their winery. Statements were asked utilising a five-point Likert scale (1=Not at all important, 5= Extremely important) and encompassed the areas of building consumer awareness, eco-labelling, and the reduction or elimination of greenhouse gas emissions. Further statements were posed which looked at the effect of sustainability on supplier and distributor relationships, the development of new business opportunities and helping wineries to reduce energy consumption. A final set of statements covered the areas of waste reduction

and the reduction of toxicity of harmful chemicals. All results referred to in this section are summarised in Table 6.26.

The potential benefits of sustainability for building consumer awareness

The New Zealand based findings related to the potential benefits of sustainability for building consumer awareness were particularly interesting with a definite polarity of responses being exhibited. 29.2 per cent of wineries surveyed stated that this was not important at all. A further 26.2 per cent were of the opinion that using these benefits to create consumer awareness was somewhat important; 16.9 per cent stated that they believed that these benefits derived from sustainable practices were very important, while 13.8 per cent respectively indicated that the benefits obtained from sustainability were either important to their winery or of extreme importance.

The potential benefits of eco-labels for company and product branding

New Zealand wineries showed a wide range of viewpoints when considering the topic of eco-labelling and the importance of this for company and product branding. 29.2 per cent of wineries surveyed stated that this was not important, while 24.6 per cent respectively reported that eco-labelling was either important to their business or somewhat important. 13.8 per cent of New Zealand wineries stated that eco-labelling was extremely important, while the remaining 7.7 per cent of respondents felt that this was a very important area in terms of their company and product branding.

The potential benefits of sustainability for reducing or eliminating greenhouse gas emissions

New Zealand wineries again exhibited a wide spectrum of responses when considering the importance of sustainable practices for reducing or eliminating greenhouse gas emissions. 27.7 per cent of respondents indicated that this was an issue which they considered to be very

important; a further 21.5 per cent chose to state that they believed this matter to be important. 20 per cent, however, viewed the reduction or elimination of greenhouse gas emissions as not important in terms of a benefit derived from sustainability. 15.4 per cent respectively reported that they either considered this issue to be somewhat important or extremely important to their winery.

The potential benefits of sustainability for wineries in terms of supplier and distributor relationships

The effect of sustainable practices on supplier and distributor relationships was viewed by New Zealand based wineries as being of no importance by 29.2 per cent of participants. 21.5 per cent indicated that this was somewhat important to their winery; 18.5 per cent respectively stated that the potential benefits to be derived with regards to strengthening these relationships were either of extreme importance or regarding as being very important.

The potential benefits of sustainability for wineries in terms of the development of new business opportunities

The potential for sustainable practices to yield new business opportunities drew a divided response from New Zealand wineries; 24.6 per cent of wineries surveyed stated this was of no importance to their business, while 21.5 per cent reported that they viewed these potential opportunities as extremely important. A further 20 per cent indicated that they felt this was somewhat important to their winery.

The potential benefits of sustainability in terms of helping wineries to reduce energy consumption

The reduction of energy consumption was regarded by 23.1 per cent of New Zealand wineries as being of extreme importance; a further 23.1 per cent reported that they felt this issue was

important, while 21.5 per cent of New Zealand based participants responded that they believed this area was very important. 16.9 per cent of respondents to the New Zealand survey felt that the reduction of energy consumption was only somewhat important as a potential benefit from employing sustainable practices.

The potential benefits of sustainability for wineries in terms of waste reduction

The potential benefits of sustainability in terms of aiding waste reduction was seen to be very important to 40 per cent of New Zealand winery respondents. A further 20 per cent stated that they felt that these benefits were of extreme importance, while 16.9 per cent deemed the benefits received to be important to their vineyard practices. Of interest here is that 15.4 per cent of New Zealand based respondents stated that they received no potential benefits, while the remaining 7.7 per cent of those surveyed stated that they only viewed the benefits received from sustainable waste reduction practices as somewhat important to their winery.

The potential benefits of sustainability for wineries in terms of the reduction of toxicity of harmful chemicals

This particular issue was seen to be on extreme importance to 47.7 per cent of New Zealand wineries surveyed, while 26.2 per cent stated that they also believed that this issue was very important. The categories of 'Important' and 'Not important' were each selected by 10.8 per cent of New Zealand based respondents. The remaining 4.6 per cent of wineries stated that they believed the reduction in the toxicity of harmful chemicals through employing sustainable practices was only somewhat important to them.

Table 6.26: Potential benefits of sustainability practices for New Zealand wineries

Statement	Not important	Somewhat important	Important	Very important	Extremely important	Mean
Builds consumer awareness of winery	29.2%	26.2%	13.8%	16.9%	13.8%	2.60
Eco label importance for company/product branding	29.2%	24.6%	24.6%	7.7%	13.8%	2.52
Reduction or elimination of greenhouse gas emissions	20.0%	15.4%	21.5%	27.7%	15.4%	3.03
Wineries' supplier and distributor relationships	29.2%	21.5%	12.3%	18.5%	18.5%	2.75
Development of new business opportunities	24.6%	20.0%	15.4%	18.5%	21.5%	2.92
Reduction of energy consumption	15.4%	16.9%	23.1%	21.5%	23.1%	3.20
Helps to reduce waste	15.4%	7.7%	16.9%	40.0%	20.0%	3.41
Helps to reduce toxicity of harmful chemicals	10.8%	4.6%	10.8%	26.2%	47.7%	3.95

When statistical analysis using an ANOVA was conducted on the data presented in Table 6.26 based on SWNZ certification no issues were found to be significant at the .05 level for SWNZ accredited businesses. However, when considered from the perspective of wineries' level of commitment towards sustainability (Table 6.27), the reduction of toxicity of harmful chemicals was found to be significant at the .05 level ($F = 6.627$, $Sig. = .002$).

Table 6.27: Potential benefits of sustainability practices for New Zealand wineries based on the level of commitment towards sustainability

Statement	F	Sig
Builds consumer awareness of winery	.817	.446
Eco label importance for company/product branding	.124	.884
Reduction or elimination of greenhouse gas emissions	.152	.859
Wineries' supplier and distributor relationships	.053	.948
Development of new business opportunities	.005	.995
Reduction of energy consumption	.066	.936
Helps to reduce waste	.102	.903
Helps to reduce toxicity of harmful chemicals	6.627	.002

Significance is measured at the .05 level.

Belief in the importance of sustainability practices

Figure 6.4 shows that the perception of the importance of sustainability practices amongst New Zealand wineries has changed dramatically since the 2010 survey where over half the respondents either agreed or strongly agreed that sustainability practices are important for the New Zealand wine industry. The 2015 survey results show that 50.8 per cent of New Zealand wineries strongly disagree that sustainable practices are important for their winery, while only 10.8 per cent either agreed or strongly agreed with this statement. However, Figure 6.5 notes that in 2015 New Zealand respondents were divided over whether sustainability practices provided wineries with a source of competitive advantage, with 44.6 per cent of wineries opting to either agreed or strongly agree that this was the case. This marks a change from the 2010 survey where 30.8 per cent of wineries disagreed with this idea, and indicates that the value of sustainable practices as a point of difference is being recognised by the New Zealand wine industry. The implications of these results will be examined in the discussion chapter of this thesis (Chapter 8).

Figure 6.4: New Zealand wine industry perceptions of the importance of sustainability 2010 – 2015

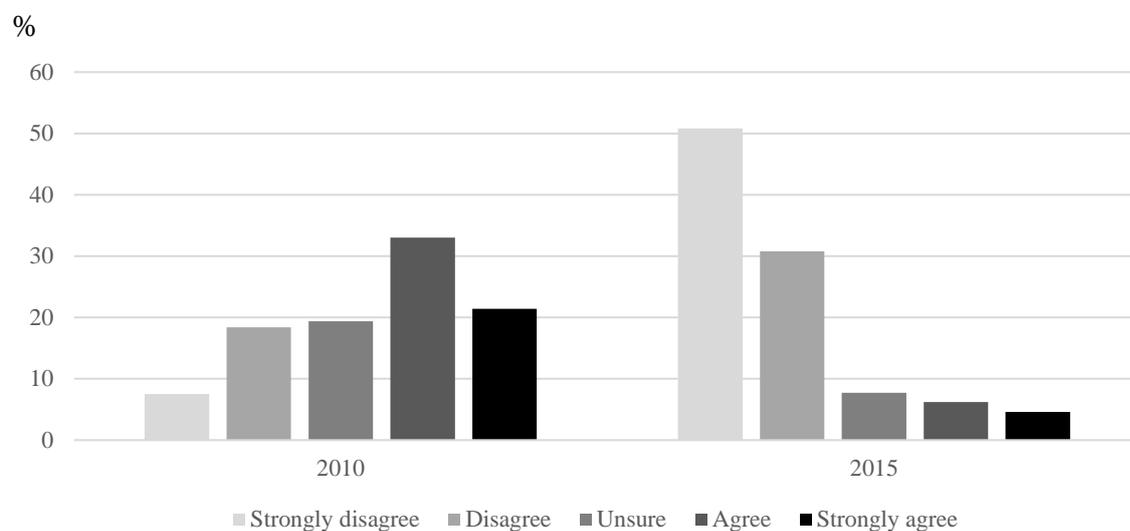
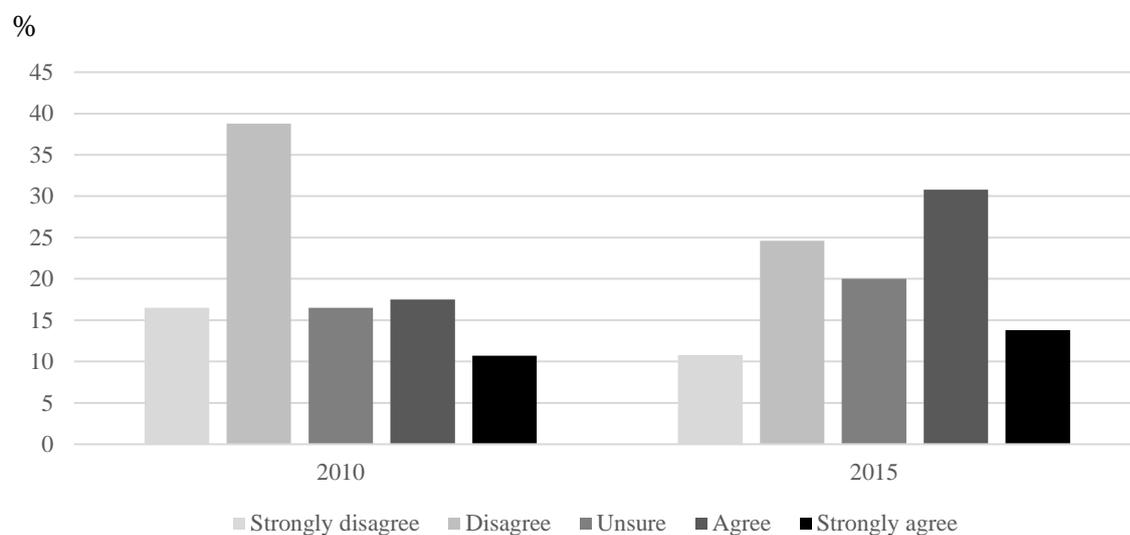


Figure 6.5: New Zealand wine industry perceptions of sustainability providing a form of competitive advantage 2010 – 2015



Reasons wineries chose to employ sustainable practices

Table 6.28 illustrates that an overwhelming majority of 89.2 per cent of respondents stated in the 2015 survey that they did not choose to employ sustainability practices to increase revenue, while 70.8 per cent responded that they did not choose to employ sustainability practices to reduce costs. This was a trend consistent with the 2010 survey. The key focus was on the reduction of environmental impacts which had increased from 60.2 per cent in 2010 by 9 per cent to 69.2 per cent in 2015. The reduction of energy consumption rose slightly from 32 per cent in 2010 to 33.8 per cent in the 2015 survey. Other reasons that were given by respondents for the adoption of sustainable practices included that it was the ‘right thing to do’, because it was enforced by New Zealand Winegrowers, so that wineries could legally export, to comply with SWNZ requirements, and also that it was mandatory to be a member of SWNZ if wineries wanted to enter wine shows. Respondents also stated that they felt that SWNZ membership had no real benefit to them; and one respondent stated that they had become BioGro Certified in order to avoid what they termed as a ‘sustainability whitewash.’ Another respondent stated the following:

“My winery has been a member of SWNZ for over 15 years. In that time not one person in the wine trade or anyone who has visited my winery has ever asked about my SWNZ certification. I’ve reached the conclusion that it has zero value for my winery in terms of a branding tool and attracting visitors.”

Further responses were also highly critical of the current nature of the SWNZ programme. One respondent stated that “For smaller wineries the cost involved coupled with the additional paperwork is just too much to even consider joining the SWNZ program. We believe that we already practice sustainable methods – we don’t need someone to dictate what these are to us”.

Another respondent stated that “Sustainability is reducing the harmful effects on the environment. New Zealand leads the world in the number of association members who invest in organic, biodynamic and sustainable practices - yet it [the SWNZ programme] does not promote this fact.” When also considering this note of organic and biodynamic practices, one respondent also stated that “Sustainability is a broad term and a complete whitewash. Who measures herbicide use using a consistent form of metric? This needs to be addressed. Also there needs to be a focus on organics and biodynamics.in the SWNZ programme.” These responses highlight a sense of dissatisfaction amongst survey participants regarding the current way in which this programme is structured, and poin out the fact that some practices appear to be being ignored.

When considering whether there were any clear economic benefits to SWNZ programme membership of particular interest here was a statement made by one participant who said that “The compulsory nature of the SWNZ program is nothing but a disguised tax for wineries. We have to pay it, but the benefits received are negligible, and don’t appear to be getting any better. For smaller wineries it is almost impossible to take part due to the costs involved.” The vehemence of this response coupled with the prior responses offered underlines that within the New Zealand wine industry the adoption of sustainable winegrowing practices is not going as smoothly as some local industry organisations would like to believe.

Table 6.28: Reasons for winery choosing to employ sustainability practices

Reason	2010 (%)		2015 (%)	
	Yes	No	Yes	No
To increase revenue	11.7	88.3	10.8	89.2
To reduce costs	29.1	70.9	29.2	70.8
To increase market share	16.5	83.5	15.4	84.6
To reduce energy consumption	32.0	68%	33.8	66.2
To reduce environmental impact	60.2	39.8	69.2	30.8
To establish/ or exploit new market opportunities	19.4	80.6	13.8	86.2
To improve productivity	21.4	78.6	13.8	86.2
To attract visitors to my winery	12.6	87.4	15.4	84.6
Other	29.1	70.9	26.2	73.8

Table 6.29 compares the significance of the reasons given in 2010 and 2015 for employing sustainable practices amongst New Zealand wineries based on SWNZ certification. Of interest here is the fact that in 2010 increasing revenue ($t = -1.452$, $\text{sig.} = .004$), increasing market share ($t = -1.338$, $\text{sig.} = .008$) and reducing energy consumption ($t = -3.420$, $\text{sig.} = .000$) were all significant at the .05 level. Establishing and/or exploiting new market opportunities ($t = -1.970$, $\text{sig.} = .000$) and using sustainable practices to attract winery visitors ($t = -1.690$, $\text{sig.} = .001$) were also found to be significant in 2010 as well. Examination of these same issues in the 2015 survey showed that only attracting winery visitors ($t = -1.174$, $\text{sig.} = .037$) was significant at the .05 level. This indicates that in the five years between these two surveys New Zealand wineries appear to have become more negative towards the benefits derived from sustainable practices, yet many still see such practices as having some form of value in attracting wine tourists.

Table 6.29: Reasons for winery choosing to employ sustainability practices based on SWNZ certification

Reason	2010		2015	
	t	Sig.	t	Sig.
To increase revenue	-1.452	.004	-.487	.314
To reduce costs	.387	.446	-.060	.903
To increase market share	-1.338	.008	-.127	.799
To reduce energy consumption	-3.420	.000	.164	.754
To reduce environmental impact	-1.651	.017	.198	.681
To establish/ or exploit new market opportunities	-1.970	.000	-.811	.082
To improve productivity	.186	.711	.053	.916
To attract visitors to my winery	-1.690	.001	-1.174	.037
Other	-2.334	.000	-.163	.740

Significance is measured at the .05 level.

Information sources for sustainable winegrowing practices

Table 6.30 shows that in terms of information sources for sustainable winegrowing practices that New Zealand wineries received the majority of their information by email (64.6 per cent). Newsletters ranked second at 58.5 per cent, while meetings were third at 53.8 per cent. Other sources (44.6 per cent) that were listed were reading about other international sustainable winegrowing practices online, the New Zealand Winegrowers' website, the Bragato Conference, and SWNZ's own research. Of interest here is that several respondents stated that it was cost prohibitive for their winery to join the SWNZ program, therefore they were unable to access the information that could potentially help inform them regarding advancements in sustainable winegrowing practices.

Table 6.30: Information sources for sustainable winegrowing practices

Source	Yes	No
Newsletters	58.5 %	41.5 %
Meetings	53.8 %	46.2 %
Emails	64.6 %	35.4 %
Other sources	44.6 %	55.4 %

Satisfaction with the level of information received regarding sustainable winegrowing practices

70.8 per cent of New Zealand wineries in the 2015 survey reported that they were satisfied with the level of information that they currently received regarding sustainable winegrowing practices. 29.2 per cent reported that they felt dissatisfied with the level of information that their winery received. As this question was new to this survey there was no data available for comparison from the previous survey iterations.

Promotion of sustainable winegrowing practices

When asked who should be primarily responsible for promoting regional sustainable winegrowing practices the private sector was viewed as most important (43.1 per cent); Public/private partnerships were ranked second (36.9 per cent) and public sector promotion was ranked third (20 per cent). The New Zealand Government and the Wine Institute of New Zealand were both cited by respondents as being other organisations who should also be primarily responsible for the promotion of regional sustainable winegrowing practices.

6.6. Biosecurity

Biosecurity measures

When asked whether their vineyard had biosecurity measures in place for wine tourists in 2015 (Table 6.31), 30.8 per cent of participants believed that the current measures that they employed were adequate, which is an 8.5 per cent rise from the 2010 figure where 22.3 per cent of respondents believed that the measures that they employed were adequate to cope with any potential biosecurity threats that may be brought onsite by wine tourists. This is also in contrast to when the same question was posed in the 2003 survey, which showed that only 11.9 per cent of wineries had biosecurity measures in place. These figures highlight that there is a gap in the knowledge of wineries towards the potential dangers presented by biosecurity threats due to a lack of adequate information sharing by those responsible for the governance of biosecurity protocols (Hall, 2003; Renton et al., 2009).

Visitor access

Respondents were also asked whether visitors were able to wander freely amongst the vines on their winery (also refer to Table 6.31). 44.6 per cent allowed visitors to walk amongst the vines at their winery, while the remaining 55.4 per cent did not allow visitor access to areas onsite in the 2015 survey. This is a 13.5 per cent increase from the 2010 survey figures where 31.1 per cent allowed visitors to walk amongst the vines at their winery.

With nearly half of New Zealand wineries reporting that visitors were able to wander freely amongst the vines when they visited a New Zealand winery it appears that the attitude towards risk mitigation requires a more cautious approach underpinned by a higher level of awareness with regard to the consequences that a disease outbreak could have for the New Zealand wine industry. As Poitras et al. (2006) suggest, a lack of protection of the natural environment can

effectively shatter any long term strategies that wineries have in place with regard to sustainability initiatives, no matter how honourable the motivations behind such strategies may be.

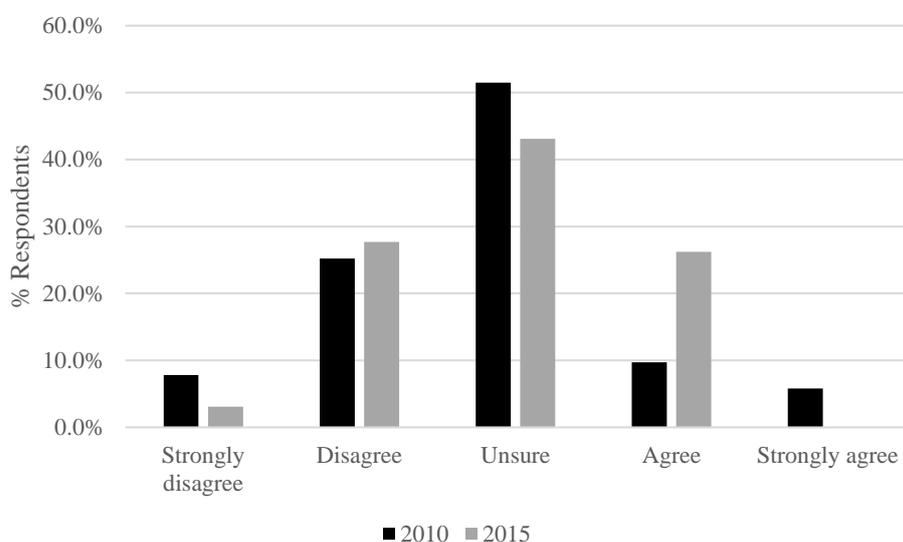
Table 6.31: Biosecurity measures and visitor access to New Zealand wineries 2003 - 2015

Statement	2003		2010		2015	
	Yes	No	Yes	No	Yes	No
Vineyard has biosecurity measures in place for tourists	11.9%	89.1%	22.3%	77.7%	30.8%	69.2%
Visitors can wander freely amongst vines at winery	N/A	N/A	31.1%	68.9%	44.6%	55.4%

Strategies and information to deal with biosecurity threats

As Figure 6.6 indicates in 2015 just under half of the wineries survey (43.1 per cent) indicated that they were unsure of whether the current level of information available regarding biosecurity threats that they received was adequate. This echoes the same trend demonstrated in the 2010 survey where over half (51.5 per cent) of the wineries surveyed replied that they felt unsure that the current level of information available regarding biosecurity threats that they received was adequate. 27.7 per cent disagreed that the information currently received regarding biosecurity threats from Government agencies was inadequate (up from 25.2 per cent in 2010), while 26.2 per cent agreed with this statement. This is of interest as in 2010 only 9.7 per cent were in agreement with this statement, so there has been an increase of 16.5 per cent, indicating that wineries feel there has been slightly more effort put into communication regarding biosecurity matters.

Figure 6.6. Winery receives adequate biosecurity information from Government agencies



Sources of information regarding biosecurity threats

Table 6.32 shows that New Zealand Winegrowers were once again cited by the wineries surveyed in 2015 as the most reliable source of information regarding biosecurity threats (76.9 per cent). This figure is down by 7.6 per cent from the 2010 figure of 84.5 per cent. The Ministry of Primary Industries were ranked second (43.1 per cent), down 57.3 per cent in 2010. In the 2015 survey newspapers ranked third at 21.5 per cent, replacing local or regional councils as the previous third placeholder (down from 37.9 per cent in 2010 to 13.8 per cent in 2015). The least reliable sources of information were Crown Research Institutes, Universities or Polytechnics and other competing business within the wine industry at 6.2 per cent each. Information accessibility (Renton et al., 2009), although seemingly having improved since the 2010 survey, still needs to be a key area of focus. Biosecurity protocols clearly require standardisation otherwise the New Zealand wine industry runs the risk of being seriously affected by potential disease outbreaks.

Table 6.32: Information sources regarding biosecurity threats

Source	# 2010	% 2010	# 2015	% 2015
Ministry of Primary Industries	59	57.3%	28	43.1%
New Zealand Winegrowers	87	84.5%	50	76.9%
Local or regional councils	39	37.9%	9	13.8%
Crown Research Institutes	4	3.9%	4	6.2%
Universities or polytechnics	4	3.9%	4	6.2%
Other competing businesses within the wine industry	11	10.7%	4	6.2%
Websites	8	7.8%	9	13.8%
Television	13	12.6%	9	13.8%
Newspapers	17	16.5%	14	21.5%
Word of mouth	26	25.2%	10	15.4%
Other	7	6.8%	4	6.2%

Note: Respondents can provide multiple answers

Biosecurity and the Sustainable Wineries New Zealand (SWNZ) scheme

Underpinning the evidence found regarding biosecurity in relation to sustainable practices in the 2015 New Zealand survey is the apparent contradiction of the argument put forward by Poitras et al. (2006) who stated that a lack of protection of the natural environment can harm any long term strategies that wineries have in place with regard to sustainability initiatives. 55.4 per cent of wineries surveyed in 2015 believed that there was no need for a biosecurity component within the SWNZ scheme. This is a similar stance to that demonstrated in 2010 where 58.3 per cent of wineries surveyed indicated that they believed that biosecurity should be not be a part of the SWNZ programme. Clearly, encouraging adoption of the SWNZ scheme could present a prime opportunity to improve the issue of poor communication with regard to biosecurity threats (Hall, 2003). By promoting SWNZ as a quality source of information regarding biosecurity protocols this could give the scheme added value, and in turn attract a greater rate of adoption of the scheme.

6.7 Innovation

The following results illustrate the levels of innovation within the New Zealand wine industry in 2015 and compare these findings with the benchmark provided by the average overall 2013 New Zealand innovation levels and New Zealand agricultural sector innovation levels as reported in the *Innovation in New Zealand 2013* study (Statistics New Zealand, 2013). Figures are also provided which compare the 2015 survey results with those of 2010.

Introduction of innovation in the New Zealand wine industry

The first set of questions on innovation asked respondents whether they had introduced any innovations over the two financial years prior to 2015. Table 6.33 and Figure 6.7 show that 53.8 per cent of respondents stated that had not introduced any new or improved goods or services over this period, while the remaining 46.2 per cent stated that their vineyards had made changes to previously existing goods or services on offer, up 13.2 per cent from the 33 per cent figure reported in the 2010 survey. This 2015 figure is more than double the New Zealand agricultural innovation average recorded in 2013 (17 per cent), and is also 3.8 per cent higher than the overall 2013 New Zealand innovation average of 50 per cent (Statistics New Zealand, 2013).

44.6 per cent of New Zealand wineries stated that they had introduced new or significantly improved operational processes, which also includes sustainable production methods. This result is also more than twice the 2013 New Zealand agricultural innovation average of 17 per cent (Statistics New Zealand, 2013), while the overall 2013 New Zealand innovation average for introducing improved operational processes was only slightly higher than that of the 2015 figure reported by the New Zealand wine industry at 51 per cent (Statistics New Zealand, 2013).

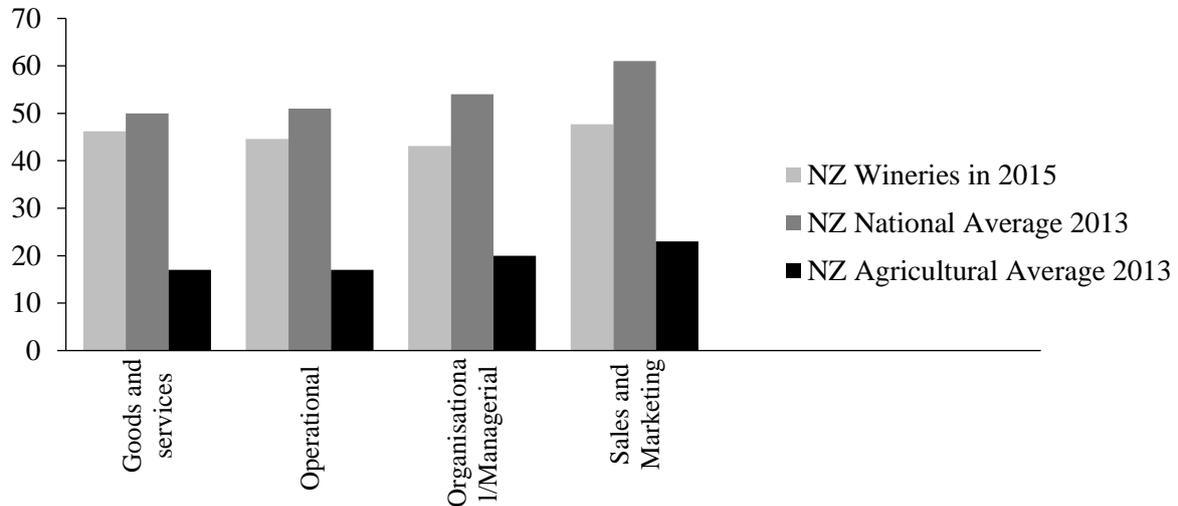
43.1 per cent of wineries had decided to implement new or significantly improved organisational or managerial processes in their businesses, which is a 3.3 per cent increase on the figure of 39.8 per cent reported in the 2010 survey. This is much higher than the 2013 New Zealand agricultural innovation average of 23 per cent (Statistics New Zealand, 2013). However, this figure is lower when compared to the overall 2013 New Zealand innovation average of 54 per cent (Statistics New Zealand, 2013). In a similar pattern to that of the 2010 survey the highest degree of innovation occurred in the implementation of new or significantly improved sales or marketing methods which was reported as 47.7 per cent. This figure represents a four per cent increase from the 2010 survey result and is also double the figure reported for the 2013 New Zealand agricultural innovation average in this category of 23 per cent (Statistics New Zealand, 2013). Although, the 2015 figure for this category is still well under the 2013 New Zealand innovation average of 61 per cent (Statistics New Zealand, 2013).

Table 6.33: Introduction of innovation over the two financial years prior to 2015

Statement	Yes (2010)	No (2010)	Yes (2015)	No (2015)	NZ National Average 2013	NZ Agricultural Average 2013
Did your winery introduce any new or improved goods or services over the last 2 financial years?	33.0%	67.0%	46.2%	53.8%	50.0%	17.0%
Did your winery introduce on to the market any new or significantly improved operational processes over the last 2 financial years?	22.3%	77.7%	44.6%	55.4%	51.0%	17.0%
Did your winery implement any new or significantly improved organisational or managerial processes over the last 2 financial years?	39.8%	60.2%	43.1%	56.9%	54.0%	23.0%
Did your winery implement any new or significantly improved sales or marketing methods over the last 2 financial years?	43.7%	56.3%	47.7%	52.3%	61.0%	23.0%

Source for New Zealand 2013 Averages: Statistics New Zealand (2013).

Figure 6.7. Introduction of innovation over the two financial years prior to 2015 for New Zealand wineries



Source for New Zealand 2013 averages: Statistics New Zealand (2013).

Based on New Zealand winery size (Table 6.34) in the 2015 survey only significantly improved organisational or managerial processes (.020) remained as the sole significant factor for the introduction of innovation in New Zealand wineries in the two years prior to 2015. This is a dramatic change from the 2010 survey when improved goods and services (Sig. = .029), new or significantly improved operational processes (Sig. = .002) and significantly improved organisational or managerial processes (Sig. = .002) were all noted as significant factors for the introduction of innovation in wineries over the two years prior to 2010 at the .05 level of significance. The 2015 results appear to indicate that larger wineries have chosen to focus solely on their organisational and managerial processes, and their resources are being directed towards these specific areas at the expense of other forms of improvement.

Table 6.34: Introduction of innovation over the two financial years prior to 2010 and 2015 based on New Zealand winery size

Statement	Yes 2010	No 2010	Yes 2015	No 2015	F test statistic 2010	Sig. 2010	F test statistic 2015	Sig. 2015
Did your winery introduce any new or improved goods or services over the last 2 financial years?	33.0%	67.0%	46.2%	53.8%	4.904	.029	1.136	.377
Did your winery introduce on to the market any new or significantly improved operational processes over the last 2 financial years?	22.3%	77.7%	44.6%	55.4%	10.209	.002	2.221	.020
Did your winery implement any new or significantly improved organisational or managerial processes over the last 2 financial years?	39.8%	60.2%	43.1%	56.9%	10.509	.002	1.039	.470
Did your winery implement any new or significantly improved sales or marketing methods over the last 2 financial years?	43.7%	56.3%	47.7%	52.3%	2.345	.129	.936	.583

Significance is measured at the .05 level.

Sales for New Zealand wineries resulting from significantly improved goods or services

Table 6.35 illustrates that sales that came as a result of new or significantly improved goods or services were reported by 47.7 per cent of respondents in 2015 as having had no effect on sales at all. This figure is an increase of 9.8 per cent from the 37.9 per cent figure reported in 2010. However, it is interesting to note that 32.3 per cent of New Zealand wineries believed that innovations introduced had actually been responsible for ten per cent or less of their overall sales. This is a significant increase of 18.7 per cent from the 13.6 per cent figure that was reported for this category in 2010.

Table 6.35: Comparison of the percentage of sales from significantly improved goods or services (2009 and 2014 financial year) compared with innovation in New Zealand agriculture

Category	# 2010	% of Sales 2010	NZ National Average 2007	NZ Agricultural Average 2007	# 2015	% of Sales 2015	NZ National Average 2013	NZ Agricultural Average 2013
Zero	39	37.9%	2.0%	15.0%	31	47.7%	3.0%	6.0%
10% or less	14	13.6%	43.0%	48.0%	21	32.3%	57.0%	46.0%
20% or less	6	5.8%	23.0%	15.0%	3	4.6%	26.0%	33.0%
30% or less	8	7.8%	10.0%	11.0%	4	6.2%	8.0%	11.0%
40% or less	0	0	5.0%	0	0	0	0	0
41% - 100%	2	1.9%	7.0%	0	0	0	0	0
Don't know	34	33.0%	9.0%	8.0%	6	9.2%	6.0%	2.0%

Sources for New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

Significantly improved goods or services prior to 2010 and 2015 based on the size of New Zealand wineries

Significantly improved goods and services that were implemented based on the size of the winery (Table 6.36) where those that were obtained from others with significant improvements being made by the respondents themselves (Sig. = .000). This is a change from 2009 financial year (which in New Zealand ends March 2010, so was used in the 2010 survey) where this factor was found to not be significant at all. In 2010 the two factors which were found to be significant at the .05 level were significantly improved goods or services developed by the winery concerned (Sig. = .017) and those that were developed by the winery in partnership with others (Sig. = .000). Neither of these two factors were reported as being significant in the 2015 survey (which used data from the 2014 financial year in New Zealand which ends in March 2015; therefore, this meant that this data was used in the 2015 survey).

Table 6.36: Significantly improved goods or services (2009 and 2014 financial year) based on winery size

Method used to make improvement	F test statistic	Sig.	F test statistic	Sig.
	2010	2010	2015	2015
Developed by this business	5.867	.017	1.027	.484
Developed by this business in partnership with others	18.867	.000	-	-
Obtained from others and significant improvements made by your business	.265	.608	3.905	.000
Obtained from others and NO significant improvements made by your business	-	-	-	-

Significance is measured at the .05 level.

Improvements made to goods or services at New Zealand wineries

36.9 per cent of wineries indicated that they had developed new or significantly improved goods or services by themselves in 2015 as indicated by Table 6.37. Although this is an increase of 6.8 per cent on the 2010 figure of 30.1 per cent, the 2015 figure for this category still falls well above the overall 2013 New Zealand innovation average of 10 per cent (Statistics New Zealand, 2013). Only 1.5 per cent of wineries had opted to develop new or significantly improved goods or services in partnership with other business in the 2015 survey. This is a decline of 7.2 per cent from the figure of 8.7 per cent reported in the 2010 survey. Hardly any wineries had obtained any new or significantly improved goods or services from others and then implemented changes themselves, with 93.8 per cent of respondents stating that they had not. This, however, was a decrease from the 98.1 per cent figure reported in 2010. 4.6 per cent of wineries stated that if they had obtained new or significantly improved goods or services from others in 2015, and then once these were implemented no further improvements were undertaken.

Table 6.37: Significantly improved goods or services

Method used to make improvement	Yes	No	NZ National Average 2007	Yes	No	NZ National Average 2013
Developed by this business	30.1%	69.9%	60.0%	36.9%	63.1%	10.0%
Developed by this business in partnership with others	8.7%	91.3%	23.0%	1.5%	98.5%	4.0%
Obtained from others and significant improvements made by your business	1.9%	98.1%	17.0%	6.2%	93.8%	2.0%
Obtained from others and NO significant improvements made by your business	-	-	18.0%	4.6%	95.4%	3.0%

Sources for New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

Improvements made to operational processes

For New Zealand wineries who had opted to introduce new or significantly improved operational processes (Table 6.38), 20 per cent of New Zealand wineries stated that they had developed their own innovative methods, an increase of 2.5 per cent from 17.5 per cent in 2010. This 2015 figure is double the overall 2013 New Zealand innovation average of 10 per cent (Statistics New Zealand, 2013). The remainder (80 per cent) had either not improved their operational processes, or if they had, this had not been done onsite. 10.8 per cent of respondents reported that these significantly improved operational processes had been developed in partnership with others; this is an increase of 5 per cent from 5.8 per cent reported in the 2010 survey. 9.2 per cent of New Zealand wineries reported that they had developed significantly improved operational processes in partnership with other businesses, which is an increase of 6.3 per cent from 2.9 per cent in 2010. 4.6 per cent stated that they had implemented significantly improved operational processes which had been obtained from others. This is an increase of 3.6 per cent from the 2010 survey where only one per cent of New Zealand wineries reported that they had made no further improvements to operational processes once they were introduced.

Table 6.38: Significantly improved operational processes for New Zealand wineries

Method used to make improvement	Yes (2010)	No (2010)	NZ National Average (2007)	Yes (2015)	No (2015)	NZ National Average (2013)
Developed by this business	17.5%	82.5%	62.0%	20.0%	80.0%	10.0%
Developed by this business in partnership with others	5.8%	94.2%	24.0%	10.8%	89.2%	4.0%
Obtained from others and significant improvements made by your business	2.9%	97.1%	17.0%	9.2%	90.8%	4.0%
Obtained from others and no significant improvements made by your business	1.0%	99.0%	18.0%	4.6%	95.4%	2.0%

Sources for New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

Significantly improved operational processes based on winery size

No categories based around significantly improved operational processes implemented based on the size of the winery (Table 6.39) were found to be significant at the .05 level in the 2015 survey. This is a change from the results of the 2010 survey where significant categories for New Zealand wineries were found to be when operational process were developed by the winery concerned in partnership with others and where operational processes had been obtained from others with no further significant improvements being made (Sig. = .011).

Table 6.39: Significantly improved operational processes prior to 2010 and 2015 based on size of winery

Method used to make improvement	F test statistic (2010)	Sig. (2010)	F test statistic (2015)	Sig. (2015)
Developed by this business	3.354	.070	.993	.520
Developed by this business in partnership with others	12.311	.001	1.130	.382
Obtained from others and significant improvements made by your business	.075	.785	1.578	.119
Obtained from others and NO significant improvements made by your business	6.641	.011	-	-

Significance is measured at the .05 level.

Improvements made to organisational and managerial processes at New Zealand wineries

Table 6.40 shows that significantly improved organisational and managerial processes were developed by 29.2 per cent of those surveyed (down from 30.1 per cent in the 2010 survey). 6.2 per cent stated that they developed these processes in partnership with other businesses, down 2.5 per cent from the figure of 9.2 per cent reported in the 2010 survey. The 2015 results are in both these categories are higher than those recorded as the 2013 New Zealand innovation averages in these areas, which were 13 per cent and 6 per cent (Statistics New Zealand, 2013). 7.7 per cent of New Zealand wineries stated that they had obtained improved organisational and managerial processes from other business in the 2015 survey, while the 2007 New Zealand innovation average in this category was only 3 per cent (Statistics New Zealand, 2013). A further 7.7 per cent of respondents stated that they made no further improvements to these processes once they had obtained them from others. The 2013 New Zealand innovation average was only one per cent in this same category (Statistics New Zealand, 2013).

Table 6.40: Significantly improved organisational and managerial processes for New Zealand wineries

Method used to make improvement	Yes (2010)	No (2010)	NZ National Average (2007)	Yes (2015)	No (2015)	NZ National Average (2013)
Developed by this business	30.1%	69.9%	68.0%	29.2%	70.8%	13.0%
Developed by this business in partnership with others	9.7%	90.3%	23.0%	6.2%	93.8%	6.0%
Obtained from others and significant improvements made by your business	4.9%	95.1%	18.0%	7.7%	92.3%	3.0%
Obtained from others and NO significant improvements made by your business	4.9%	95.1%	9.0%	7.7%	92.3%	1.0%

Sources for New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

Improvements made to organisational and managerial processes based on winery size

No categories based around significantly improved organisational or managerial processes based on the size of the winery were found to be significant at the .05 level in the 2015 survey. This marks a change from the 2010 survey where processes developed by the winery concerned (Sig. = .001) and those that were developed by the winery in partnership with others (Sig. = .000) were found to be significant.

Improvements made to sales and marketing methods at New Zealand wineries

Significantly improved sales and marketing methods (Table 6.41) were reported as having been developed by 30.8 per cent of wineries, down 4.2 percentage points from 35 per cent in the 2010 survey. This 2015 figure is more than twice the 2013 New Zealand innovation average of 13 per cent (Statistics New Zealand, 2013). 9.2 per cent indicated that these methods were developed in partnership with other businesses, which is slightly higher than the 2013 New Zealand innovation average of 9 per cent (Statistics New Zealand, 2013). This figure was down 4.4 per cent however from the 13.6 per cent of wineries who responded positively to this question in the 2010 survey. Only 6.2 per cent stated that they had obtained improved sales and marketing methods from other businesses, which is higher than the 2013 New Zealand innovation average of 3 per cent for this category (Statistics New Zealand, 2013). 7.7 per cent made no further improvements to these processes upon implementation.

Table 6.41: Significantly improved sales and marketing methods for New Zealand wineries

Method used to make improvement	Yes (2010)	No (2010)	NZ National Average (2007)	Yes (2015)	No (2015)	NZ National Average (2013)
Developed by this business	35.0%	65.0%	53.0%	30.8%	69.2%	13.0%
Developed by this business in partnership with others	13.6%	86.4%	31.0%	9.2%	90.8%	9.0%
Obtained from others and significant improvements made by your business	8.7%	91.3%	17.0%	6.2%	93.8%	3.0%
Obtained from others and NO significant improvements made by your business	3.9%	96.1%	15.0%	7.7%	92.3%	2.0%

Sources for New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

No categories based around significantly improved organisational or managerial processes based on the size of the winery were found to be significant in the 2015 survey. This represents a change from the 2010 survey where improved sales or marketing methods developed by the wineries in partnership with others (Sig. = .021) were listed as being significant at the .05 level.

Reasons for innovation occurring at New Zealand wineries

The reasons given for innovation were varied (Table 6.42), with improving productivity being given as the primary reason (69.2 per cent). This was still below the 2013 New Zealand innovation average of 83 per cent (Statistics New Zealand, 2013) and the 2013 New Zealand agricultural sector innovation average of 77 per cent (Statistics New Zealand, 2013). The need to reduce costs ranked second (64.6 per cent), followed by increasing responsiveness to customers and establishing or exploiting new market opportunities which were third equal at 63.1 per cent. Other notable mentions were to increase market share (61.5 per cent) and to reduce environmental impact (52.3 per cent).

When compared to the 2013 New Zealand innovation and agricultural sector averages all of the reasons listed in Table 6.42 fell below their respective national averages apart from establishing/exploiting new market opportunities (63.1 per cent compared to the 2013 New Zealand national average of 59 per cent) and improving work safety standards which was reported as 44.6 per cent compared to the 2013 New Zealand national average of 37 per cent (Statistics New Zealand 2013). Comparing the 2015 survey results to the 2013 New Zealand agricultural averages shows that New Zealand wineries fell below these averages in all areas apart from increasing market share, establishing/exploiting new market opportunities, reducing energy consumption and also reducing their environmental impact.

Reasons for innovation occurring at New Zealand wineries based on winery size

No reasons for innovation based on the size of the winery were found to be significant in the 2015 survey. This result shows a change from the 2010 survey where increasing productivity (Sig. = .036), reducing energy consumption (Sig. = .002) and to reducing environmental impact (Sig. = .017) were all significant at the .05 level.

Table 6.42: Reasons for innovation occurring in New Zealand wineries 2010 - 2015

Reason	Yes (2010)	No (2010)	Don't know (2010)	NZ National Average (2007)	NZ Agricultural Average (2007)	Yes (2015)	No (2015)	Don't know (2015)	NZ National Average (2013)	NZ Agricultural Average (2013)
To improve productivity	45.6%	28.2%	26.2%	66.0%	64.0%	69.2%	23.1%	7.7%	83.0%	77.0%
To increase productivity	41.7%	31.1%	27.2%	66.0%	64.0%	50.8%	43.1%	6.2%	74.0%	88.0%
To reduce costs	50.5%	22.3%	27.2%	71.0%	28.0%	64.6%	24.6%	10.8%	68.0%	67.0%
To increase responsiveness to customers	45.6%	26.2%	28.2%	59.0%	51.0%	63.1%	26.2%	10.8%	70.0%	29.0%
To increase market share	50.5%	20.4%	29.1%	68.0%	45.0%	61.5%	27.7%	10.8%	70.0%	33.0%
To establish/ or exploit new market opportunities	52.4%	24.3%	23.3%	38.0%	32.0%	63.1%	27.7%	9.2%	59.0%	31.0%
To improve work safety standards	23.3%	43.7%	33.0%	24.0%	26.0%	44.6%	44.6%	10.8%	37.0%	53.0%
To reduce energy consumption	35.0%	35.0%	30.1%	26.0%	17.0%	40.0%	46.2%	13.8%	22.0%	25.0%
To reduce environmental impact	47.6%	27.2%	25.2%	33.0%	18.0%	52.3%	38.5%	9.2%	26.0%	46.0%
To replace goods and services being phased out	5.8%	63.1%	31.1%	26.0%	35.0%	18.5%	67.7%	13.8%	22.0%	18.0%

Sources for New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

Sources of ideas and information for innovation

Existing staff (62.4 per cent), new staff (46.2 per cent) and competitors and other businesses within the wine industry (44.6 per cent) were noted as being the leading sources of ideas and information for innovation at New Zealand wineries (Table 6.43), and this follows a similar pattern to the results of the 2010 survey. Suppliers (40 per cent) along with information from books, journals, patent disclosures and information derived from the Internet (38.5 per cent) were also cited as important. Government agencies and Crown Research Institutes are once again both rated the lowest as sources in the 2015 survey, polling at 12.3 per cent and 7.7 per cent respectively. No 2013 New Zealand agricultural averages were available for this section.

Sources of ideas and information for innovation based on winery size

No sources of ideas and information for innovation based on the size of the winery were found to be significant in the 2015 survey at the .05 level. This result shows a dramatic change from the 2010 survey where significant sources based on winery size were found to be new staff (Sig. = .001), existing staff (Sig. = .026), other businesses within the same business group (Sig. = .049), suppliers (Sig. = .0090), competitors and other businesses within the same industry (Sig. = .014), businesses from other industries (Sig. = .040), literatures from the Internet (Sig. = .003), industry or employer organisations (Sig. = .003), Crown Research institutes (Sig. = .008) and Government agencies (Sig. = .000).

Table 6.43: Sources of ideas and information for innovation at New Zealand wineries 2010 - 2015

Source	Yes (2010)	No (2010)	Don't know (2010)	NZ National Average (2007)	Yes (2015)	No (2015)	Don't know (2015)	NZ National Average (2013)
New staff (appointed in the last 2 years)	32.0%	64.1%	3.9%	51.0%	46.2%	52.3%	1.5%	52.0%
Existing staff	52.4%	45.6%	1.9%	70.0%	64.6%	35.4%	0	73.0%
Other businesses within the business group (e.g. subsidiaries or parent companies)	14.6%	82.5%	2.9%	31.0%	21.5%	72.3%	6.2%	47.0%
Customers	31.1%	65.0%	3.9%	57.0%	46.2%	53.8%	0	61.0%
Suppliers	30.1%	68.0%	1.9%	47.0%	40.0%	56.9%	3.1%	50.0%
Competitors and other businesses from the same industry	33.0%	63.1%	3.9%	45.0%	44.6%	50.8%	4.6%	N/A
Businesses from other industries (not including customers or suppliers)	20.4%	74.8%	4.9%	22.0%	26.2%	70.8%	3.1%	N/A
Professional advisors, consultants, banks or accountants	27.2%	68.9%	3.9%	44.0%	33.8%	64.6%	1.5%	49.0%
Books, journals, patent disclosures or the Internet	29.1%	65.0%	5.8%	41.0%	38.5%	56.9%	4.6%	46.0%
Wine shows, festivals or conferences	22.3%	71.8%	5.8%	46.0%	30.8%	64.6%	4.6%	43.0%
Industry or employer organisations	19.4%	74.8%	5.8%	30.0%	30.8%	63.1%	6.2%	31.0%
Universities or polytechnics	11.7%	83.5%	4.9%	9.0%	6.2%	87.7%	6.2%	10.0%

Table 6.43: Sources of ideas and information for innovation at New Zealand wineries 2010 - 2015 (continued)

Source	Yes (2010)	No (2010)	Don't know (2010)	NZ National Average (2007)	Yes (2015)	No (2015)	Don't know (2015)	NZ National Average (2013)
Crown Research Institutes, other research institutes or research associations	6.8%	88.3%	4.9%	7.0%	7.7%	87.7%	4.6%	5.0%
Government agencies	7.8%	86.4%	5.8%	13.0%	12.3%	80.0%	7.7%	12.0%

Sources for New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

Activities to support innovation

The relative lack of activities undertaken to support innovation that was found in the 2010 survey was also seen to repeat itself in the 2015 survey. Compared with the 2013 New Zealand innovation averages (Table 6.44), the main activities listed that were done in support of innovation were design (such as graphics used on bottle labels) at 36.9 per cent followed by the acquisition of new computer hardware or software (32.3 per cent) and acquiring new machinery or equipment in third place (30.8 per cent). These top three activities were well above the national averages of 9 per cent for design, 21 per cent for the acquisition of new computer hardware or software and 16 per cent for acquiring new machinery or equipment (Statistics New Zealand, 2013).

The introduction of new varieties of grapes and viticultural techniques were both reported as being undertaken by only 23.1 per cent of those who were surveyed; this figure, however, is up 6.6 per cent from the figure of 16.5 per cent reported in 2010. Marketing the introduction of new goods and services (29.2 per cent) along with the implementation of new business strategies or management techniques (26.2 per cent) were noted as having been done to support innovation, and were also both above the 2013 New Zealand innovation averages of 13 per cent and 15 per cent respectively. These areas in the 2010 survey had fallen short of the 2007 New Zealand innovation averages (Statistics New Zealand, 2007), and suggested some resistance from wineries towards activities supporting innovation. However, the 2015 survey results appear to indicate somewhat less resistance than that seen in the 2010 survey and the beginning of a more accommodating approach towards activities which support innovation amongst New Zealand wineries.

Activities to support innovation based on winery size

Table 6.45 indicates that the acquisition of new machinery or equipment was the only activity in the 2015 survey which was shown to be significant at the .05 level based on winery size. This represents a major change from the 2010 survey where all activities to support innovation were classed as being significant regardless of the size of the winery concerned.

Table 6.44: Activities to support innovation in New Zealand wineries 2010 - 2015

Activity	Done to support innovation (2010)	Done, though not to support innovation (2010)	Not Done (2010)	Don't know (2010)	Done to support innovation (NZ Average 2007)	Done, though not to support innovation (NZ Average 2007)	Done to support innovation (2015)	Done, though not to support innovation (2015)	Not Done (2015)	Don't know (2015)	Done to support innovation (NZ Average 2013)	Done, though not to support innovation (NZ Average 2013)
Introduce a new variety of grape	16.5%	1.9%	62.1%	19.4%	-	-	29.2%	6.2%	60.0%	4.6%	-	-
Use of new viticultural techniques	16.5%	13.6%	45.6%	24.3%	-	-	23.1%	20.0%	52.3%	4.6%	-	-
Acquire new machinery and equipment	15.5%	12.6%	52.4%	19.4%	29.0%	38.0%	30.8%	23.1%	44.6%	1.5%	16.0%	31.0%
Acquire new computer hardware and software	18.4%	20.4%	45.6%	15.5%	38.0%	46.0%	32.3%	24.6%	41.5%	1.5%	21.0%	42.0%
Acquire other knowledge (e.g. outsourcing for new techniques or intellectual property)	13.6%	6.8%	64.1%	15.5%	14.0%	6.0%	21.5%	16.9%	56.9%	4.6%	7.0%	7.0%

Table 6.44: Activities to support innovation in New Zealand wineries 2010 – 2015 (continued)

Activity	Done to support innovation (2010)	Done, though not to support innovation (2010)	Not Done (2010)	Don't know (2010)	Done to support innovation (NZ Average 2007)	Done, though not to support innovation (NZ Average 2007)	Done to support innovation (2015)	Done, though not to support innovation (2015)	Not Done (2015)	Don't know (2015)	Done to support innovation (NZ Average 2013)	Done, though not to support innovation (NZ Average 2013)
Implement new business strategies or management techniques	16.5%	10.7%	48.5%	24.3%	35.0%	33.0%	26.2%	18.5%	52.3%	3.1%	15.0%	20.0%
Implement organisational restructuring	7.8%	7.8%	53.4%	31.1%	22.0%	31.0%	24.6%	30.8%	40.0%	4.6%	10.0%	19.0%
Design (e.g. graphic design on labelling of bottles)	18.4%	7.8%	44.7%	29.1%	17.0%	7.0%	36.9%	21.5%	38.5%	3.1%	9.0%	5.0%
Market the introduction of new goods and services	15.5%	3.9%	50.5%	30.1%	33.0%	20.0%	29.2%	16.9%	52.3%	1.5%	14.0%	13.0%

Table 6.44: Activities to support innovation in New Zealand wineries 2010 – 2015 (continued)

Activity	Done to support innovation (2010)	Done, though not to support innovation (2010)	Not Done (2010)	Don't know (2010)	Done to support innovation (NZ Average 2007)	Done, though not to support innovation (NZ Average 2007)	Done to support innovation (2015)	Done, though not to support innovation (2015)	Not Done (2015)	Don't know (2015)	Done to support innovation (NZ Average 2013)	Done, though not to support innovation (NZ Average 2013)
Market research	9.7%	11.7%	47.6%	31.1%	20.0%	16.0%	26.2%	18.5%	53.8%	1.5%	9.0%	10.0%
Significant changes to existing marketing strategies	14.6%	12.6%	44.7%	28.2%	17.0%	17.0%	26.2%	24.6%	47.7%	1.5%	9.0%	10.0%
Employee training	13.6%	20.4%	38.8%	27.2%	38.0%	51.0%	29.2%	33.8%	33.8%	3.1%	21.0%	50.0%

Sources for New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

Table 6.45: Activities to support innovation based on New Zealand winery size 2010 – 2015

Activity	Done to support innovation (2010)	Done, though not to support innovation (2010)	Not Done (2010)	Don't know (2010)	F (2010)	Sig. (2010)	Done to support innovation (2015)	Done, though not to support innovation (2015)	Not Done (2015)	Don't know (2015)	F (2015)	Sig. (2015)
Introduce a new variety of grape	16.5%	1.9%	62.1%	19.4%	8.000	.000	29.2%	6.2%	60.0%	4.6%	1.578	.119
Use of new viticultural techniques	16.5%	13.6%	45.6%	24.3%	5.856	.000	23.1%	20.0%	52.3%	4.6%	1.241	.291
Acquire new machinery and equipment	15.5%	12.6%	52.4%	19.4%	6.303	.001	30.8%	23.1%	44.6%	1.5%	2.346	.015
Acquire new computer hardware and software	18.4%	20.4%	45.6%	15.5%	3.452	.019	32.3%	24.6%	41.5%	1.5%	1.293	.255
Acquire other knowledge (e.g. outsourcing for new techniques or intellectual property)	13.6%	6.8%	64.1%	15.5%	3.462	.019	21.5%	16.9%	56.9%	4.6%	1.239	.293
Implement new business strategies or management techniques	16.5%	10.7%	48.5%	24.3%	5.659	.001	26.2%	18.5%	52.3%	3.1%	1.721	.080
Implement organisational restructuring	7.8%	7.8%	53.4%	31.1%	13.755	.000	24.6%	30.8%	40.0%	4.6%	.974	.541

Table 6.45: Activities to support innovation based on New Zealand winery size 2010 – 2015 (continued)

Activity	Done to support innovation (2010)	Done, though not to support innovation (2010)	Not Done (2010)	Don't know (2010)	F (2010)	Sig. (2010)	Done to support innovation (2015)	Done, though not to support innovation (2015)	Not Done (2015)	Don't know (2015)	F (2015)	Sig. (2015)
Design (e.g. graphic design on labelling of bottles)	18.4%	7.8%	44.7%	29.1%	7.325	.000	36.9%	21.5%	38.5%	3.1%	1.323	.236
Market the introduction of new goods and services	15.5%	3.9%	50.5%	30.1%	8.556	.000	29.2%	16.9%	52.3%	1.5%	1.060	.450
Market research	9.7%	11.7%	47.6%	31.1%	2.928	.038	26.2%	18.5%	53.8%	1.5%	.974	.541
Significant changes to existing marketing strategies	14.6%	12.6%	44.7%	28.2%	4.814	.0041	26.2%	24.6%	47.7%	1.5%	1.139	.374
Employee training	13.6%	20.4%	38.8%	27.2%	3.382	.021	29.2%	33.8%	33.8%	3.1%	.891	.635

Significance is measured at the .05 level.

6.8 Cooperative arrangements

The definition of cooperative arrangements for the purposes of this survey are based on the Statistics New Zealand (2011) definition where such arrangements mean active participation with another organisation or individual for the purpose of innovation.

Cooperative arrangements for the purpose of innovation

Based on the 65 respondents who replied to this section in the survey, only 23.1 per cent reported having cooperative arrangements in place that were for the purpose of innovation during the two years leading up to the 2015 financial year. This is down 4.1 per cent from the 27.2 per cent figure reported in the 2010 survey.

Businesses or institutions that wineries engaged in cooperative arrangements with New Zealand wineries

Businesses or institutions that were engaged in cooperative arrangements with New Zealand wineries (Table 6.46) were shown in the 2015 survey to be competitors and other businesses from within the New Zealand wine industry and suppliers (first equal at 10.8 per cent each), followed by customers (9.2 per cent). Crown Research Institutes, other research institutes, or research associations were deemed to be the leading source of institutional support (7.7 per cent). Due to the unavailability of data on the New Zealand National Averages for 2013 (aside from information on customers and suppliers) comparisons with the 2013 National Averages for the remaining five categories in Table 6.46 were unable to be made.

Overseas cooperative arrangements for New Zealand wineries were mainly with businesses from other industries at 16.9 per cent, followed by customers and suppliers (second equal at 9.2 per cent each). These were both below the 2013 New Zealand innovation averages reported 13 per cent and 19 per cent respectively in this category.

Table 6.46: Businesses or institutions that New Zealand wineries have cooperative arrangements with 2010 - 2015

Type of business or institution	NZ (2010)	Located in NZ National Average 2007	Overseas (2010)	Located Overseas NZ National Average 2007	No cooperation (2010)	NZ (2015)	Located in NZ National Average 2013	Overseas (2015)	Located Overseas NZ National Average 2013	No cooperation (2015)
Customers	12.6%	9.0%	8.7%	2.0%	13.6%	9.2%	45.0%	9.2%	13.0%	75.4%
Suppliers	10.7%	10.0%	1.9%	4.0%	16.5%	10.8%	50.0%	9.2%	19.0%	72.3%
Businesses from other industries	8.7%	6.0%	2.9%	1.0%	18.4%	4.6%	-	16.9%	-	1.5%
Competitors and other businesses from the same industry	18.4%	8.0%	1.0%	2.0%	15.5%	10.8%	-	1.5%	-	52.3%
Other businesses within the business group (e.g. subsidiaries or parent companies)	3.9%	6.0%	1.0%	3.0%	23.3%	3.1%	-	1.5%	-	78.5%
Universities or polytechnics	7.8%	3.0%	4.9%	1.0%	20.4%	6.1%	-	4.6%	-	21.5%
Crown Research Institutes, other research institutes, or research associations	6.8%	3.0%	1.9%	1.0%	20.4%	7.7%	-	1.5%	-	80.0%

Source for New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

Activities where wineries engaged in cooperative arrangements

Table 6.47 shows that in 2015 for New Zealand wineries engaged in cooperative arrangements joint marketing or distribution was the main activity undertaken (15.4 per cent), followed by joint research and development (9.2 per cent). Joint production was in third position at 3.1 per cent. No New Zealand wineries in the 2015 survey stated that they were currently involved in joint prototype development. These figures represent a significant change from the 2010 results where joint training was the main activity undertaken (49.5 per cent), followed by joint marketing or distribution (40.6 per cent).

Table 6.47: Activities where wineries engaged in cooperative arrangements

Activity	2010		2015	
	Yes	No	Yes	No
Joint marketing or distribution	40.6%	59.4%	15.4%	84.6%
Joint production	19.0%	81.0%	3.1%	96.9%
Joint research and development	18.6%	81.4%	9.2%	90.8%
Joint prototype development	8.9%	91.1%	0.0%	100.0%
Joint training	49.5%	50.5%	1.5%	98.5%
Other	3.8%	96.2%	0.0%	100.0%

Reasons for engaging in cooperative arrangements

The need to spread risk (72.3 per cent) was the main reason given for engaging in cooperative arrangements (Table 6.48), followed by access to work practices (47.7 per cent). Sharing costs ranked in third position at 15.4 per cent, while access to research and development was given as a reason by 12.3 per cent of New Zealand wineries. Access to management skills and new suppliers were amongst the least likely reasons to engage in such arrangements with both of these reasons being cited by only 4.6 and 3.1 per cent of respondents respectively. These results mark a change from the 2010 survey where sharing costs ranked first (32 per cent), followed

by the desire to spread risk (16.5 per cent), and the access to research and development 13.6 per cent.

When compared to the 2013 New Zealand national and agricultural averages the desire spreading risk is almost six times higher than the 2013 New Zealand agricultural average of 12 per cent, while access to work practices is double the 2013 New Zealand agricultural average of 22 per cent.

6.9 Networks and cooperation

Organisations which New Zealand wineries reported having relationships with

The key organisations which New Zealand wineries reported having relationships with for the purposes of cooperative marketing or promotion (Table 6.49) were Regional Wine Organisations and Regional Tourism Organisations (both first equal in the 2015 survey at 12.3 per cent) followed by hospitality associations (8.2 per cent) and Regional Grape Growing Associations (7.7 per cent). This represents a changes from the main organisations cited in the 2010 survey (Table 6.49) of Visitor Information Centres (10.7 per cent) followed by Business Development Boards (9.7 per cent) and Regional Tourism Organisations (7.8 per cent).

The organisations that wineries stated that they had the most contact with in 2015 (Table 6.50) were Local Councils (49.2 per cent) followed by Regional Councils (43.1 per cent). The least contact was with Regional Grape Growers Associations (6.2 per cent). Data for this question was not available from the 2003 survey; in the 1997 survey however, 70 per cent of wine producers had contact with Visitor Information Centres, while 63 per cent had contact with Regional Tourism Organisations.

Table 6.48: Reasons for engaging in cooperative arrangements 2010 - 2015

Reason	% of wineries (2010)	NZ National Average 2007	NZ Agricultural Average 2007	% of wineries (2015)	NZ National Average 2013	NZ Agricultural Average 2013
Sharing costs	32.0%	38.0%	59.0%	15.4%	35.0%	22.0%
Spreading risk	16.5%	22.0%	41.0%	72.3%	22.0%	12.0%
Access to research and development	13.6%	34.0%	41.0%	12.3%	33.0%	44.0%
Access to production processes	9.7%	25.0%	36.0%	7.7%	23.0%	30.0%
Access to management skills	5.8%	40.0%	36.0%	3.1%	33.0%	38.0%
Access to new distribution channels	8.7%	28.0%	34.0%	9.2%	28.0%	18.0%
Access to work practices	2.9%	33.0%	44.0%	47.7%	36.0%	22.0%
Access to financial resources	1.9%	16.0%	28.0%	4.6%	17.0%	26.0%
Access to new markets	11.7%	43.0%	36.0%	9.2%	40.0%	30.0%
Access to new suppliers	1.9%	19.0%	31.0%	3.1%	24.0%	19.0%
Other	1.5%	16.0%	10.0%	0.0%	20.0%	37.0%

Sources for the New Zealand 2007 and 2013 Averages: Statistics New Zealand (2007); Statistics New Zealand (2013).

Table 6.49: Organisations which New Zealand wineries have relationships with 2010

Organisation	Type of relationship (2010)						
	None	Contact as required	Member	Cooperative marketing or promotion	Member and cooperative marketing or promotion	Cooperative marketing or promotion and contact as required	Other relationship
Tourism New Zealand	65.0%	20.4%	3.9%	6.8%	-	-	3.9%
Regional Tourism Organisation	43.7%	31.3%	16.5%	7.8%	-	7.8%	1.2%
New Zealand Winegrowers	25.2%	13.6%	56.3%	3.9%	-	-	1.0%
Sustainable Winegrowers New Zealand (SWNZ)	15.5%	15.5%	62.1%	5.8%	-	-	1.0%
NZGVIG	66.0%	8.7%	17.5%	1.0%	-	-	6.8%
Regional Grape Growers Association	35.0%	12.6%	42.7%	6.8%	-	-	2.9%
NZ Society of Viticulture and Genology	57.3%	17.5%	18.4%	1.0%	-	-	5.8%
Regional Wine Organisation	34.0%	14.6%	41.7%	6.8%	-	-	2.9%
Visitor Information Centres	45.6%	30.1%	13.6%	10.7%	-	-	-
Tourism Industry Association of New Zealand	68.9%	17.5%	4.9%	6.8%	-	-	1.9%
100% Pure New Zealand	74.8%	14.6%	2.9%	6.8%	-	-	1.0%
Business Development Boards	65.0%	14.6%	9.7%	9.7%	-	-	1.0%
Local Council	42.7%	47.6%	7.8%	1.9%	-	-	-
Regional Council	53.4%	35.9%	5.8%	2.9%	-	-	1.9%
Trade And Industry New Zealand	47.6%	32.0%	5.8%	6.8%	-	-	7.8%
Chamber of Commerce	62.1%	23.3%	10.7%	-	-	-	3.9%
Ministry of Economic Development	69.9%	20.4%	1.9%	3.9%	-	-	3.9%
Other Central Government Agencies	66.0%	22.3%	3.9%	3.9%	-	-	3.9%
Hospitality Associations	55.3%	26.2%	13.6%	2.9%	-	-	1.9%
Local food and wine promotion group/network	55.3%	22.3%	17.5%	4.9%	-	-	-

Table 6.50: Organisations which New Zealand wineries had relationships with in 2015

Organisation	Type of relationship (2015)						
	None	Contact as required	Member	Cooperative marketing or promotion	Member and cooperative marketing or promotion	Cooperative marketing or promotion and contact as required	Other relationship
Tourism New Zealand	66.2 %	18.5 %	9.2 %	6.2 %	-	-	1.5 %
Regional Tourism Organisation	35.4 %	33.8 %	18.5 %	12.3 %	-	-	1.5 %
New Zealand Winegrowers	7.7 %	15.4 %	70.8 %	6.2 %	-	-	1.5 %
Sustainable Winegrowers New Zealand (SWNZ)	16.9 %	10.8 %	64.6 %	6.2 %	-	-	1.5 %
NZGVIG	67.7 %	16.9 %	13.8 %	-	-	-	1.5 %
Regional Grape Growers Association	24.9 %	6.2 %	60.0 %	7.7 %	-	-	1.5 %
NZ Society of Viticulture and Genology	67.7 %	16.9 %	13.8 %	1.5 %	-	-	1.5 %
Regional Wine Organisation	24.6 %	12.3 %	50.8 %	12.3 %	-	-	1.5 %
Visitor Information Centres	56.9 %	24.6 %	13.8 %	5.1 %	-	-	-
Tourism Industry Association of New Zealand	72.3 %	18.5 %	4.6 %	4.6 %	-	-	1.5 %
100% Pure New Zealand	55.4 %	36.9 %	3.1 %	3.1 %	-	-	1.5 %
Business Development Boards	60.0 %	27.7 %	7.7 %	4.6 %	-	-	-
Local Council	44.6 %	49.2 %	3.1 %	4.6 %	-	-	-
Regional Council	47.7 %	43.1 %	9.2 %	1.5 %	-	-	-
Trade And Industry New Zealand	55.4 %	33.8 %	3.1 %	7.7 %	-	-	-
Chamber of Commerce	67.7 %	26.2 %	4.6 %	1.5 %	-	-	-
Ministry of Economic Development	56.9 %	36.9 %	4.6 %	-	-	-	1.5 %
Other Central Government Agencies	66.2 %	24.6 %	4.6 %	4.6 %	-	-	-
Hospitality Associations	46.2 %	27.7 %	16.9 %	8.2 %	-	-	-
Local food and wine promotion group/network	64.6 %	24.6 %	6.2 %	4.6 %	-	-	-

6.10 New Zealand tourism and marketing

New Zealand wine and food festivals

As respondents could attend more than one festival, there were multiple responses to this question, and these added to more than 100 per cent. Out of the 65 responses to this question, 38.5 per cent of wineries surveyed did not attend a wine or food festival (an increase of 10.5 per cent on the 2003 figure of 28 per cent). The Marlborough Wine Festival was cited as the festival which most respondents attended (13.8 per cent).

Of the 26.2 per cent who chose the category ‘Other’ in response to this question, festivals not listed in the 2015 survey that these wineries reported taking part in were the Cromwell Wine and Food Festival, the Gibbston Wine and Food Festival, Taste (Auckland, Wellington and Christchurch), the Brightwater Wine and Food Fair, the Fritter Festival (Whangarei), the Keri Keri Street Festival, the Mangawhai Walking Weekend Wine and Food Festival and the Omori Estate Wine and Food Festival. Winetitles (2015) list over 50 wine festivals which are held in New Zealand annually, and these have become important for not only the promotion of wineries but are also essential in terms of creating awareness of the products that these wineries offer.

Winery attributes

Based solely on the responses that fell into the extremely important or very important categories, the quality of the wines and the whole experience ranked first equal for New Zealand wineries in the 2015 survey at 86.2 per cent each. Atmosphere and setting and location were second equal (72.3 per cent), while the provision of a tasting area ranked third (66.2 per cent). This marks a change from the 2010 survey where the quality of the wines (85.3 per cent),

personalised and friendly service (79.2 per cent), and the whole experience (77.5 per cent) were listed as the most important attributes. The least important attributes according to the 2015 survey were the quality of the environment (29.2 per cent), meeting the winemaker (30.8 per cent) and wine awards received (41.5 per cent). Other attributes that respondents cited as important in the 2015 survey (6.2 per cent) included brand awareness, cellar door staff, outdoor landscaping and the provision of bed and breakfast facilities.

Regional attributes

Table 6.51 denotes the rankings of regional attributes based solely on the responses that fell into the extremely important or very important categories in the 2003, 2010 and 2015 surveys. This saw the quality of wines and the prestige or character of a district first equal in the 2015 survey at 76.9 per cent, while the quality of the environment ranked in second place (67.7 per cent). Festivals and events ranked third (58.5 per cent). The least important attribute was the size of the region (35.4 per cent). Other attributes listed by respondents as important were being close to a major town or city.

Previous rankings for regional attributes in the 2010 survey listed the quality of wines (80.7 per cent) as the most important attribute, while the prestige or character of a district and the scenery of the region were both second equal with 70.7 per cent each. The proximity to a major city or destination (58 per cent) ranked in third place. The size of the region (35 per cent) or whether the region had festivals or events (34.1 per cent) were the least important attributes in the 2010 survey.

Table 6.51: Regional attributes for New Zealand wineries 2003 – 2015

Attribute	2003				2010				2015			
	# stating extremely important or very important	Total responses	% of total responses	Ranking based on % of response	# stating extremely important or very important	Total responses	% of total responses	Ranking based on % of response	# stating extremely important or very important	Total responses	% of total responses	Ranking based on % of response
Prestige or character of the district	72	89	80.90%	2	58	82	70.0%	2 =	50	65	76.9%	1=
Quality of wines	84	91	92.31%	1	67	83	80.0%	1	50	65	76.9%	1=
Quality of environment	-	-	-	-	39	82	47.5%	4 =	44	65	67.7%	2
Other attractions and festivals	46	85	54.12%	5	39	82	47.5%	4 =	28	65	43.1%	6
Festivals and events	43	86	50.00%	6	28	82	34.10%	6 =	38	65	58.5%	3
Scenery	52	86	48.84%	7	58	82	70.0%	2 =	30	65	46.2%	5
Size	18	80	22.5%	8	28	80	35.0%	7	23	65	35.4%	7
Proximity to major city/ destination	50	90	55.56%	4	47	81	58.0%	3	32	65	49.2%	4
Other	6	9	66.6%	3	4	9	44.4%	5	0	65	0.0%	8

Most important forms of media used to attract visitors

Based on those who responded with a 'yes' to the information sources listed in the 2015 survey (Table 6.52), word of mouth was regarded as the most important form of media when it came to attracting visitors to wineries at 66.2 per cent. This was followed by visitor information sources (40 per cent) and mailing lists (38.5 per cent). Of note is that Tourism New Zealand ranked as the third least important form of media (21.5 per cent). Other forms of media that were viewed as important by respondents were wine maps and having wine brands advertised in restaurants. Comparing the 2015 results to the 2010 survey (Table 6.52) shows that Websites were viewed as the most important form of media in 2010 at 65.0 per cent, followed by word of mouth (64.1 per cent) and mailing lists (53.4 per cent)

Most useful information sources

The usefulness of information sources was also questioned and based on the responses in the extremely important or very important categories in the 2015 survey, word of mouth ranked as the most useful (66.2 per cent) followed by visitor information sources (40 per cent) and mailing lists (38.5 per cent). Of interest is that the least valuable information source was reported as being websites (16.9 per cent). The results of the 2010 survey show that word of mouth also ranked as the most useful (75.9 per cent) followed by mailing lists (46.9 per cent) and visitor information sources ranked as the third most useful information source (43.3 per cent), while websites ranked fourth (39 per cent). The least valuable information sources were television and radio (last equal at .06 per cent each).

Table 6.52: Media information sources and their perceived usefulness to New Zealand wineries 2010 - 2015

Media source	2010				2015			
	# stating extremely important or very important	Total responses	% of total responses	Ranking based on % of response	# stating extremely important or very important	Total responses	% of total responses	Ranking based on % of response
Wine shows	20	80	25.0%	11	12	65	18.5%	11=
Wine and Food Festivals	22	82	26.8%	10	12	65	18.5%	11=
Wine clubs	17	80	21.2%	12 =	13	65	20.0%	10=
Retail trade	22	80	27.5%	9	19	65	29.2%	6
Tourism New Zealand	9	81	11.1%	15	14	65	21.5%	9=
Local or Regional Organisation	25	82	30.5%	5	23	65	35.4%	4
Visitor information sources	36	83	43.3%	3	26	65	40.0%	2
Word of mouth	63	83	75.9%	1	43	65	66.2%	1
New Zealand Winegrowers	15	81	18.5%	13	13	65	20.0%	10=
Mailing list	39	83	46.9%	2	25	65	38.5%	3
Magazines	8	82	.09%	17 =	10	65	15.4%	13
Newspapers	10	80	12.5%	14	16	65	24.6%	8
Radio	5	80	.06%	16 =	3	65	4.6%	15
Television	5	79	.06%	16 =	13	65	20.0%	10=
Website	32	82	39.0%	4	11	65	16.9%	12
Guidebooks	23	82	28.0%	8	14	65	21.5%	9=
Internet Promotion	17	80	21.2%	12 =	17	65	26.2%	7=
Online Social Media	23	80	28.7%	7	17	65	26.2%	7=
Brochures	23	78	29.4%	6	22	65	33.8%	5
Other	6	65	.09%	17 =	5	65	7.7%	14

Winery attitudes towards tourism

Evaluating wineries' attitudes towards tourism (Table 6.53) produced some interesting trends. The perception that cellar door visitors do not buy much wine, which in 2010 had fallen to the lowest level recorded across all three prior surveys (23.3 per cent), demonstrated the highest percentage recorded across all of the New Zealand surveys in 2015 with 32.3 per cent either agreeing or strongly agreeing with this statement. A decline was noted in wineries' attitudes towards the value of tourists which fell by 8.5 percentage points from the 77.7 per cent in 2010 to 69.2 per cent in 2015. This statement however was the one that those surveyed either agreed or strongly agreed the most about in the 2015 results, a trend which also occurred in the 2010 survey results.

When asked whether tourism attracted a wide range of customers to their winery, 67.7 per cent either agreed or strongly agreed with this statement, which an increase of 10.4 percentage points from the 2010 survey figure of 57.3 per cent. Tourism was viewed as providing significant marketing opportunities by 47.7 per cent, which was also down by 10.5 percentage points on the figure recorded in 2010 (58.2 per cent). The impact of tourism on sales of wine offshore was viewed as important; a 7.2 percentage point increase was reported from 2010 (35.9 per cent) indicated with 43.1 per cent of New Zealand respondents in 2015 either agreeing or strongly agreeing with this statement.

The question of whether tourism contributed greatly to their business success saw 52.3 per cent agree or strongly agree with this statement, marking a rise of 23.2 percent on the figure of 29.2 per cent that was reported in 2010. The overall benefits of tourism were seen to outweigh the negative impacts by 40 per cent in 2015, which is a drop of 14.4 per cent from the 2010 survey

where just over half of those surveyed (54.4 per cent) agreed or strongly agreed with this statement. This 2015 result is a continuation of the decline that was reported in the 2010 survey with regards to this statement.

66.2 per cent of those surveyed believed that tourism was important in terms of word of mouth promotion for their winery, which is an increase of 3.1 per cent from the 2010 figure (63.1 per cent). Only 16.9 per cent either agreed or strongly agreed that tourism did not attract the kind of visitors that they wanted to their winery, which is an increase of 4.3 per cent from the 12.6 per cent recorded in 2010, but when considered next to the figure recorded in 1997 of 21.7 per cent shows a 4.8 per cent decrease in agreement with this statement.

Table 6.53: New Zealand winery attitudes towards tourism 1997 - 2015

Statement	1997 Strongly agree/ agree	2003 Strongly agree/ agree	2010 Strongly agree/ agree	2015 Strongly agree/ agree
Cellar door visitors do not buy much wine	25.9%	29.4%	23.3%	32.3%
Tourists are valuable	65.5%	82.6%	77.7%	69.2%
Tourism attracts a wide range of customers to my winery	69.1%	69.1%	57.3%	67.7%
Tourism provides significant marketing opportunities	56.1%	69.4%	58.2%	47.7%
Tourism positively impacts the sales of my wine offshore	n/a	45.7%	35.9%	43.1%
Tourism does not contribute greatly to my business success	28.9%	28.5%	29.2%	52.3%
The overall benefits of tourism outweigh the negative impacts	68.8%	77.1%	54.4%	40.0%
Tourism increases awareness of my winery through word of mouth	n/a	n/a	63.1%	66.2%
Tourism does not attract the kind of visitors I want to my winery	21.7%	13.3%	12.6%	16.9%

Tourism and respondents' wine regions

Based on the responses of those who either strongly agreed or agreed to the statements in this section for the 2015 survey (Table 6.54) it was found that the most New Zealand respondents agreed that the promotion of tourism in a region brings more visitors to a winery (13.9 per cent). The second highest ranked statement was that the tourism industry has much to offer the wine industry (9.3 per cent), while the statement that tourism was important to the wine industry was ranked in third place (9.2 per cent). The least agreement was with the statement that the wine industry has much to offer tourism (6.2 per cent). This is a change from the results found in the 2010 survey where it was found that the most respondents agreed that tourism was important to the wine industry (42.7 per cent). The second highest ranked statement in 2010 was that the promotion of tourism in a region brings more visitors to a winery (31.1 per cent and first in the 2015 survey), while third equal was shared between the statements that tourism should be actively encouraged in the wine industry and that the wine industry has much to offer the tourism industry (both on 30 per cent each). The least agreement was with the statement that the tourism industry has much to offer the wine industry (27.1 per cent), so it is of interest that this has now moved to second position in the 2015 results. When similar statements were posed in the 2003 survey, there was strong agreement on the fact that respondents felt that the wine industry had a lot to offer the tourism industry (95 per cent), while the encouragement of regional tourism within the wine industry ranked second (92 per cent), followed by the tourism industry being important to the wine industry (91.2 per cent) which ranked first in the 2010 survey. In 2003 the least agreement was with the statement that promoting tourism brings more visitors to my winery (80.2 per cent).

Table 6.54: Tourism and its importance to New Zealand wine regions 2003 -2015

Statement	2003				2010				2015			
	# stating strongly agree/ agree	Total responses	% of total responses	Ranking based on % of response	# stating strongly agree/ agree	Total responses	% of total responses	Ranking based on % of response	# stating strongly agree/ agree	Total responses	% of total responses	Ranking based on % of response
Tourism is important to the wine industry	94	103	91.2%	3	44	103	42.7%	1	9.2%	65	6	3
Promoting tourism in the region brings more visitors	77	96	80.2%	5	32	103	31.1%	2	13.9%	65	9	1
Tourism needs to be encouraged in the wine industry	93	101	92.0%	2	31	103	30.0%	3 =	7.7%	65	5	4
The wine industry has much to offer the tourism	97	102	95.0%	1	31	103	30.0%	3 =	6.2%	65	4	5
The tourism industry has much to offer the wine industry	87	100	87.0%	4	28	103	27.1%	4	9.3%	65	6	2

Note: Data from the 1997 New Zealand survey was unavailable for this question.

Wine tourism and product/brand awareness

When taking in consideration the results of the three previous New Zealand surveys the responses received in 2015 (Table 6.55) indicate that wineries were mostly in agreement when asked if wine tourism enhances their product or awareness of their brand (21.5 per cent reported strongly agreeing with this statement, while 50.8 per cent also stated that they agree). However, both of these percentages have fallen slightly based on the 1997, 2003 and 2010 figures. However, the higher level of uncertainty reported with regards to this statement in the 2010 survey (28.2 per cent) had fallen to 18.5 per cent in the 2015 survey.

Table 6.55: Wine tourism enhances product/brand awareness

	1997	2003	2010	2015
Strongly Agree	21.4%	25.8%	24.3%	21.5%
Agree	51.0%	47.4%	43.7%	50.8%
Unsure	17.3%	22.7%	28.2%	18.5%
Disagree	10.2%	3.1%	1.0%	6.2%
Strongly Disagree	0	1.0%	2.9%	3.1%

Wine tourism and wine product differentiation

Table 6.56 indicates that most wineries in 2015 agreed (32.3 per cent) when asked whether wine tourism helped to differentiate their wine from others. 16.9 per cent of wineries strongly agreed that wine tourism aided with product differentiation; this is a reversal of the trend witnessed in the 2010 survey which saw this rise to 20.4 per cent from the 2003 figure of just 10.4 per cent. New Zealand wineries who disagreed with this statement increased by 10.5 percentage points from 4.9 per cent in 2010 to 15.4 per cent in 2015.

Table 6.56: Wine tourism helps to differentiate my wine from others

	1997	2003	2010	2015
Strongly Agree	14.3%	10.4%	20.4%	16.9%
Agree	34.7%	34.4%	32.0%	32.3%
Unsure	27.6%	38.5%	38.8%	30.8%
Disagree	23.5%	15.6%	4.9%	15.4%
Strongly Disagree	0.0%	1.0%	3.9%	4.6%

Wine tourism and mail order sales

Table 6.57 shows that 36.9 per cent agreed that wine tourism helped to develop their mail order sales in 2015; this is an increase of 8.7 per cent from 28.2 per cent in 2010. 15.4 per cent of New Zealand survey respondents in 2015 strongly agreed with this statement, marking a 4.7 percent increase from the 10.7 per cent figure recorded in 2010.

Table 6.57: Wine tourism helps to develop mail order sales

	1997	2003	2010	2015
Strongly Agree	14.3%	12.5%	10.7%	15.4%
Agree	36.7%	41.7%	28.2%	36.9%
Unsure	26.5%	26.0%	46.6%	27.7%
Disagree	17.3%	15.6%	11.7%	16.9%
Strongly Disagree	5.1%	4.2%	2.9%	3.1%

Wine tourism and Internet based sales

Table 6.58 details whether those surveyed believed that wine tourism helped to develop Internet based sales. 46.2 per cent agreed with this statement in the 2015 survey, which is an increase of 15.1 per cent from the figure of 31.1 per cent reported in 2010. 24.6 per cent of New Zealand respondents were uncertain as to whether this was the case; this figure however is a 23 per cent decrease from the 2010 figure of 47.6 per cent. 12.3 per cent strongly agreed with this statement, up from 7.8 per cent. 13.8 per cent disagreed that Internet sales were aided by wine tourism; this was a 3.1 per cent increase from the 10.7 per cent in 2010. As this was a

question that was only first introduced in the 2010 survey, data from the 2003 and 1997 surveys was not available.

Table 6.58: Wine tourism helps to develop Internet based sales

	1997	2003	2010	2015
Strongly Agree	n/a	n/a	7.8%	12.3%
Agree	n/a	n/a	31.1%	46.2%
Unsure	n/a	n/a	47.6%	24.6%
Disagree	n/a	n/a	10.7%	13.8%
Strongly Disagree	n/a	n/a	2.9%	3.1%

Wine tourism and customer education

Most respondents were in agreement that wine tourism helped to educate their customers (Table 6.59) in the 2015 survey (12.3 per cent strongly agreed and 46.2 per cent agreed with this statement). This follows a similar pattern to the results to this question from the 2010 and 2003 surveys. However, there does exist a degree of uncertainty concerning this issue which was seen to rise by 13.2 percentage points from 20.8 per cent in 2003 to 34 per cent in 2010. In the 2015 survey this level of uncertainty relating to this topic had fallen by 9.4 per cent to 24.6 per cent which suggests that the value of wine tourism as a form of customer education is slowly becoming more recognised amongst New Zealand winegrowers.

Table 6.59: Wine tourism helps to educate my customers

	2003	2010	2015
Strongly Agree	17.7%	19.4%	12.3%
Agree	52.1%	37.9%	46.2%
Unsure	20.8%	34.0%	24.6%
Disagree	7.3%	6.8%	13.8%
Strongly Disagree	2.1%	1.9%	3.1%

Tourism Promotion

Table 6.61 shows that based solely on the percentage of responses which fell into the extremely important or very important categories, the wine trial or road signage along with winery based events ranked first (66.2 per cent) followed by winery based events (52.3 per cent) and the use of a regional wineries brochure (44.6 per cent). This marks a slight change from the 2010 survey where wine trial or road signage along with winery based events ranked first equal (both on 48.5 per cent) followed by regional winery brochures (31.0 per cent) and regional tourist guides (26.2 per cent). The least successful tourist promotion for those who were surveyed in 2015 were holiday and travel shows along with tourism awards (both on 6.2 per cent). These two forms of promotion were also ranked last in the 2010 survey.

When asked who should be primarily responsible for the promotion of wine tourism (Table 6.60) those surveyed in 2015 thought that regional tourism organisations (53.8 per cent) should be, followed by individual wineries and wine industry associations equal with 23.1 per cent each. Tourism New Zealand was mentioned by one respondent as also having a degree of responsibility with the promotion of wine tourism.

The 2015 New Zealand survey figures represent a change in the pattern observed in the 2010 survey where although regional tourism organisations were cited as being primarily responsible (51.4 per cent), individual wineries were second (28.2 per cent), and wine industry associations were regarded as the least responsible for promoting wine tourism (20.4 per cent). The 2003 survey saw regional tourism organisations were cited as being primarily responsible (48.3 per cent), individual wineries were second (32.2 per cent), and wine industry associations were ranked third (19.5 per cent). The 1997 survey saw the primary responsibility for the promotion

of wine tourism rest with wine industry associations (38.6 per cent) followed by individual wineries (32.8 per cent) and regional tourism associations (28.6 per cent).

Table 6.60: Primary responsibility for promoting wine tourism in New Zealand

	1997	2003	2010	2015
Regional Tourism Organisations	28.6%	48.3%	51.4%	53.8%
Wine Industry Associations	38.6%	19.5%	20.4%	23.1%
Individual wineries	32.8%	32.2%	28.2%	23.1%

Other wine tourism related promotional activities

When New Zealand respondents were asked what other wine tourism related promotional activities that they would like to see more of the use of wine related events in conjunction with other ventures featured strongly. Also mentioned were the need for more regional wine district development and better promotion of wine tourism at airports as tourists arrive at their destination. The need for better winery signage, more television coverage of wine tourism and a greater level of industry support from Tourism New Zealand were also suggested.

Other participant comments related to wine tourism and sustainability

Collecting participant comments relating to wine tourism and sustainability yielded some interesting responses. The most pertinent was that several wineries stated that they felt that sustainability was important in terms of branding but did not deliver the return it should in terms of profitability. Another respondent pointed out that New Zealand leads the world in the number of SWNZ members who invest in organic, biodynamic and sustainable practices - yet it does not promote this fact. Participants also pointed out that climate change cannot be regulated; changes to practices must occur to meet these new challenges. More information was required by participants in terms of savings in bottle weight and the effect of this on their carbon footprint, along with more of a focus on electricity and renewable resources.

Table 6.61: Tourism promotions that have been successful for attracting wine tourists to New Zealand wineries 2003 - 2015

Tourism promotion	2003				2010				2015			
	# stating extremely important or very important	Total responses	% of total responses	Ranking based on % of response	# stating extremely important or very important	Total responses	% of total responses	Ranking based on % of response	# stating extremely important or very important	Total responses	% of total responses	Ranking based on % of response
Regional wineries brochure	44	80	55.0%	2	32	103	31.0%	2	29	65	44.6%	3
Holiday and travel shows	2	71	2.8%	11	5	103	.04%	10	4	65	6.2%	9=
Wine and food festivals	45	82	54.9%	3	22	103	21.3%	4	16	65	23.1%	6
Tourism awards	4	73	5.5%	10	11	103	10.6%	9	4	65	6.2%	9=
Media familiarisation	16	78	12.5%	9	12	103	11.7%	8	12	65	18.5%	7
Public tastings	26	77	33.8%	5	17	103	16.5%	6	16	65	24.6%	5=
Wine exhibitions/shows	24	76	31.6%	6	16	103	15.5%	7	11	65	16.9%	8
Regional tourist guides	25	80	31.3%	7	27	103	26.2%	3	19	65	29.2%	4
Winery based events	40	78	51.3%	4	50	103	48.5%	1 =	34	65	52.3%	2
Wine trail or road signage	52	82	63.4%	1	50	103	48.5%	1 =	43	65	66.2%	1
Regional website	12	76	15.8%	8	20	102	19.6%	5	16	65	24.6%	5=

Note: No data was available for this question from the 1997 survey.

6.11 Chapter Summary

The findings presented in this chapter have revealed that there are many significant gaps in what is known about both New Zealand wine tourism and also of the industry itself in terms of its attitudes toward sustainable practices. Biosecurity and sustainability issues show some interesting results; the latter especially shows some problems exist in the New Zealand wine industry in terms of attitudes towards the treatment of migrant workers. Another point of note is that wineries do not appear to see the value in sustainable business practices; whether this is in part due to the mandatory nature of the SWNZ scheme as some participants have suggested in their comments is definitely a cause for concern.

The 2015 New Zealand survey results do point toward some changes within the industry however; this can be seen in the fact that New Zealand wineries appear to be slowly beginning to realise the value of innovative business strategies in order to remain viable. Being able to see tangible benefits from new or improved business practices is still the key to gaining widespread acceptance of change within the New Zealand wine industry as there does still appear to be an element of risk aversion occurring on the part of local wine producers.

To provide a comparative analysis of these results this study will now turn to compare the 2015 New Zealand survey results with the findings from the 2016 Tasmanian and Western Australian Wineries' Sustainability Survey. The implications of these results will be discussed in Chapter 7.

Chapter 7

Tasmanian and Western Australian findings

7.1 Chapter Introduction

This chapter will examine the results of the 2016 Tasmanian and Western Australian surveys. It is set out in the same structure as the New Zealand survey results in Chapter 6 of this thesis, and also contains commentary based around the comparative component of this study between the Australian results and the 2015 New Zealand survey results.

7.2. Tasmanian Wine Industry Profile

Industry overview

The Tasmanian wine industry began with the showing of wine at the 1848 Paris exhibition; however, it was not until the 1950s that the potential of localised wine production began to be realised (Wine Tasmania, 2018a). One of the key elements of competitive advantage for the Tasmanian wine region is its cool climate winegrowing conditions:

Tasmania has a moderate maritime climate, cooled by prevailing westerly winds off the Southern Ocean, providing conditions free of extremes in temperature. Mild spring and summer temperatures, with warm autumn days and cool nights allow the grapes to ripen slowly on the vine, resulting in maximum varietal flavour development. This is achieved without losing that essential natural acidity that gives wine both freshness and balance (Wine Tasmania, 2018a, n.p.).

Varietals produced in the region include Pinot Noir, Riesling, Chardonnay, Sauvignon Blanc, Cabernet Sauvignon, Pinot Gris and Sparkling Wines (Discover Tasmania, 2018). Governance of Tasmania's 160 individual wine producers and 230 vineyards (Wine Tasmania, 2018a) falls under the jurisdiction provided by Wine Tasmania, an industry peak body who oversee a sustainability programme entitled VinØ (Wine Tasmania, 2018a). Membership of the programme is entirely voluntary and focuses on helping Tasmanian wine producers "to be recognised as world leaders in the sustainable production of premium cool climate wine" (Wine Tasmania, 2018a, p. 4). Given the fact that Tasmania is an island, biosecurity is one area where governing bodies have been very proactive (Wine Tasmania, 2018b). The goals of the VinØ programme are to support vineyard practices, their outcomes and efficiencies, and also provide a platform by which the brand can be promoted to customers (Wine Tasmania, 2018c).

The *Wine Tasmania Strategic Plan 2018–2020* estimates that the Tasmanian wine industry brings \$AUD 115.2 million to the local economy, placing it amongst the ten top sectors state-wide in terms of earnings (Wine Tasmania 2018a).

The VinØ program

VinØ is a best practice management system which aims to help wine through the use of a reporting tool to provide Tasmanian wine producers with the ability to monitor, report and improve practices (Wine Tasmania, 2018e). Members of the program receive feedback on their progress in the form of an annual benchmarking report, and this details the areas where performance is strong, and areas which need to be improved (Wine Tasmania, 2018c). VinØ also gives members the ability to gauge their performance against other members of the program (Wine Tasmania, 2018c).

The reporting criteria dictate the minimum requirements to attain achievement of progress toward sustainability. VinØ was initiated to accomplish two objectives:

1. To provide a template for all Tasmanian winegrowers to assess and improve their own sustainability against a set of best practice parameters and recognised metrics; and
2. To provide the evidence to the greater community that Tasmanian winegrowers take their stewardship of the landscape seriously.

(Wine Tasmania, 2018c, n.p.)

7.3. Western Australian Wine Industry Profile

Industry overview

Wine production in Western Australia first began in 1840 when Sandalford was established in the Swan Valley region (Wine Australia, 2018). The development of fine wine growing, which focused on the cooler southwest area, began with the development of the Margaret River winegrowing region in the 1960s (Gladstones, 1992). This was then followed by the Great Southern and Geographe wine regions (Cellarmasters, 2019).

Estimates for the period 2016/17 place the overall value of the Western Australian wine industry at \$AUD 684 million (Wines of Western Australia [WoWA], 2018). In terms of production Western Australian wineries produce 42 million litres of wine per annum ((WoWA, 2018). This was 3 per cent of the volume of Australia's wine production in the 2016/17 period but represented 8.5 per cent of the total value (WoWA, 2018). Western Australia's climate plays a vital role in providing the spectrum of wine varieties which emerge from the state (Department of Agriculture, 2018). In terms of describing this climate, the Department of Agriculture (2018, p.31) state the following:

The [Western Australian] wine industry's special dependence on unique regions is strongly related to climate. Western Australia's nine wine producing regions and five sub-regions span cool to warm climate viticulture and high to low rainfall. Each region produces wine varieties, styles and blends with distinctive characters. While temperatures are projected to increase and rainfall to decrease under a future climate the Western Australian wine industry is resilient to these changes.

However, key challenges facing this industry could potentially undermine this resilience. Western Australia lacks a structured state-wide sustainable winegrowing programme (Discover Sustainable Wine, 2019), such as the VinØ programme in Tasmania, and biosecurity is also an area which appears to be only recently gaining consideration with the publication of the *Western Australian Viticulture Industry Biosecurity Manual* (Department of Primary Industries and Regional Development, 2018). If Western Australian wineries wish to become known for adopting sustainable winegrowing practices, then the options available to them are to become part of either the EntWine national sustainable winegrowing programme, or the Sustainable Winegrowing Australia (SAW) programme, which is provided under licence by McLaren Vale Sustainable Winegrowing Australia (MVSWSGA) (Discover Sustainable Wine, 2019). This lack of a state-wide sustainable winegrowing programme means that communication around what constitutes sustainable practices at the vineyard level is being driven by national schemes which fail to focus specifically on regional sustainability issues.

This chapter will now turn to examine the results of the Tasmanian and Western Australian surveys in order to gauge the responses of wine producers. These results will then be compared with those of their New Zealand based contemporaries.

7.4 Winery profile

Location

Coal River returned the most responses in Tasmania with six replies to the survey. Derwent Valley and Huon/Channel both returned three responses; Tamar Valley returned two, while the East Coast had the lowest response rate with just one response. Wineries from all five Tasmanian wine regions returned responses to the 2016 survey.

The highest number of responses received in Western Australia came from the Geographe region (10 responses). Margaret River returned nine responses, while four responses were received from the Pemberton region. The lowest response rate of only one survey returned was shared by the Mount Barker, Perth Hills and Porongurup regions respectively. Wineries from each of the ten Western Australian wine regions returned responses to the 2016 survey.

Winery Age

Tasmanian respondents to the survey reported that the earliest planting of grapes was in 1958, while Western Australian wineries stated that 1930 was the year when grapes were first planted.

First commercial release of wine amongst respondents

The first commercial release of wine reported by Tasmanian participants was in 1975, while the first commercial release of wine in Western Australia occurred in 1934. 2008 was the year when the most Tasmanian wineries (20 per cent) reported commercially releasing their wine in a single year, while 2001 was reported as being the year that this occurred for the highest number (15.2 per cent) of Western Australian wineries.

Employees

The average number of full time, part-time and casual employees reported by Tasmanian wineries was an average of 19 casual employees. Western Australian wineries had just two full time employees and 11 casual employees on average.

Production levels for Tasmanian and Western Australian wineries

Production levels for Tasmanian wineries ranged from a minimum of 545 litres and a maximum of 130,000 litres being reported. Median production for Tasmanian wineries was 12,000 litres with a mean of 24,653 litres. Western Australian wineries' production levels ranged from 700 litres to 1,480,000 litres. Median production for Western Australian wineries was 15,000 litres with a mean of 78,961 litres.

Location of wine production for Tasmanian and Western Australian wineries

46.7 per cent of Tasmanian wineries stated that their wine was made on site. 6.7 per cent preferred not to state where their wine was made, while the remaining 46.6 per cent of Tasmanian respondents reported that their wine was made by outside contractors. 60.6 per cent of Western Australian wineries indicated that their wine was made onsite, and 1.7 per cent preferred not to state where their wine was made. The remaining 30.8 per cent of respondents reported that they had their wine made by other Western Australian wineries by contract.

Ownership status for Tasmanian and Western Australian wineries

The ownership status of Tasmanian wineries saw the highest number of respondents reporting that they were either sole proprietors or business partnerships with both forms of ownership

first equal at 33.3 per cent. Private companies ranked second (26.7 per cent) while trusts ranked in third place (6.7 per cent).

Western Australian wineries reported that the ownership status of the highest number of wineries were partnerships (48.5 per cent), while sole proprietorships ranked second with 24.2 per cent. Private companies ranked third at 21.2 per cent, and the remaining 6.1 per cent of responses stated that their wineries were trusts. No wineries in either Tasmania or Western Australia reported that they were public companies or selected the ‘Other’ option.

Of interest here is that the levels of both partnership and sole proprietorship status reported by Tasmanian and Western Australian wineries is significantly higher than that of New Zealand wineries in the 2015/2016 survey (Table 7.1). New Zealand also had a much higher number of wineries who reported that they were private companies (69.2 per cent compared with Tasmania’s 26.7 per cent and Western Australia’s 21.2 per cent).

Table 7.1: Comparison of ownership status between Tasmanian, Western Australian and New Zealand wineries in 2015/2016

	Tasmania	Western Australia	New Zealand
Sole proprietor	33.3%	24.2%	7.7%
Public company	0.0%	0.0%	3.1%
Partnership	33.3%	48.5%	12.3%
Trust	6.7%	6.1%	6.2%
Private company	26.7%	21.2%	69.2%
Other	0.0%	0.0%	1.5%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Turnover for Tasmanian and Western Australian wineries

26.7 per cent of Tasmanian wineries stated that they received an annual turnover of between \$AUD \$100,000 - \$249,999 over the 2015 tax year from the sales of all products and services.

20 per cent reported that their annual turnover was less than \$AUD \$50,000, while a further 20 per cent preferred not to state what their annual turnover was. 13.3 per cent stated that their annual turnover was in excess of \$AUD \$750,000; a further 13.3 per cent declared that their annual turnover was between \$AUD \$500, 000 - \$750,000. The remaining 6.7 per cent of wineries indicated that their annual turnover was in the region of \$AUD \$50,000 - \$99,999.

Western Australian wineries reported that 30.3 per cent received an annual turnover of between \$AUD \$100,000 - \$249,999 for the 2015 tax year. Three categories shared the ranking for second place at 18.2 per cent each; these were the categories of an annual turnover in excess of \$AUD \$750,000, between \$AUD \$50,000 - \$99,999 and the category of having an annual turnover of less than \$AUD \$50,000. Wineries who reported that their annual turnover was between \$AUD \$250,000 - \$499,999 ranked in third position. No Western Australian wineries preferred not to state what their annual turnover was.

Distribution of wine sales for Tasmanian and Western Australian wineries

Table 7.2 offers a comparison between Tasmanian and Western Australian wine sales. The category of 'Other domestic wine sales' ranked in first place for Tasmania at 49.3 per cent, while cellar door sales ranked second at 33.1 per cent. Postal sales were also reported to be important by 11.3 per cent of Tasmanian respondents. Western Australian respondents reported that cellar door sales were the most important (41.9 per cent), while other domestic wine sales were ranked second at 27.5 per cent, and postal order sales third at 17.4 per cent. In comparison export wine sales ranked as being the most important source of wine sales for New Zealand wineries (39.3 per cent) followed by 'Other domestic wine sales' at 34.3 per cent. Cellar door sales were ranked third by New Zealand wineries as a source of revenue (13.2 per cent).

Table 7.2: Distribution of Tasmania, Western Australian and New Zealand wine sales

Category	#TAS 2016	%TAS 2016	# WA 2016	% WA 2016	#NZ 2015	% NZ 2015
Other domestic wine sales	7	49.3%	9	27.5%	20	34.3%
Export wine sales	1	2.3%	2	4.8%	25	39.3%
Cellar door wine sales	5	33.1%	14	41.9%	8	13.2%
Internet order wine sales	1	2.3%	3	8.7%	3	4.9%
Postal mail order wine sales	2	11.3%	6	17.4%	4	5.7%
Accommodation	1	1.7%	1	0.6%	1	2.6%
Other products and services	0	0.0%	0	0.0%	0	5.6%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Distribution of Tasmania and Western Australian domestic wine sales compared with New Zealand domestic wine sales

Table 7.3 shows that restaurants were reported by Tasmanian wineries to be the leading form of revenue for domestic wine sales (80 per cent), while specialist wine stores ranked second (73.3 per cent) and other Farmers' markets third (33.3 per cent). Western Australian wineries viewed restaurants as the most important source of domestic wine revenue (66.7 per cent) followed by specialist wine stores (54.5 per cent). Wine clubs ranked in third place (8.3 per cent). Of interest is that New Zealand wineries valued not only restaurants (first at 38.3 per cent) and specialist wine stores (second at 32.3 per cent) as key sources of revenue for domestic wine sales, but also saw supermarkets as an important source. Supermarkets were viewed as an important source of domestic wine sale revenue by only 3 per cent of Western Australian wineries. Farmers' markets were not seen as a valuable source of domestic wine revenue by any Tasmanian survey participants.

Table 7.3: Distribution of Tasmanian and Western Australian domestic wine sales in 2016 compared with 2015 New Zealand domestic wine sales

Category	TAS	WA	NZ
Supermarkets	13.3%	3.0%	19.3%
Specialist wine stores	73.3%	54.5%	32.3%
Restaurants	80.0%	66.7%	38.3%
Wine clubs	3.0%	8.3%	4.4%
Farmers' markets	33.3%	2.7%	1.5%
Other outlets	0.0%	4.9%	4.2%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand)

Cellar door sales

Number of Tasmanian and Western Australian wineries who offer cellar door sales in 2016

Both Tasmanian and Western Australian wineries reported placing a high level of value on offering cellar door sales (Table 7.4); Tasmanian wineries stated that 80 per cent of participants offered cellar door sales, while 87.9 per cent of Western Australian wineries stated that cellar door sales were offered onsite. These figures are in line with results reported by New Zealand participants.

Table 7.4: Tasmanian, Western Australian and New Zealand wineries who offer cellar door sales in 2016

	# TAS	% TAS	# WA	% WA	#NZ	% NZ
Offer	12	80.0%	29	87.9%	53	81.5%
Do not offer	3	20.0%	4	12.1%	12	18.5%
Total	15	100%	33	100%	65	100%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Significant characteristics for cellar door sales

Table 7.5 is focused on whether there were significant characteristics that dictated if cellar door sales were offered amongst Tasmanian, Western Australian and New Zealand wineries or not. When considering region, winery size, whether the wine is made on site, ownership status and annual turnover no characteristics were found to be significant at the .05 level of significance.

Table 7.5: Characteristics that define whether cellar door sales are offered amongst Tasmanian, Western Australian and New Zealand wineries

Characteristic	TAS F	TAS Sig	WA F	WA Sig	NZ F	NZ Sig.
Region	.129	.725	.653	.425	.156	.856
Winery Size	.158	.697	.328	.571	.250	.779
Wine is made on site	.236	.635	.376	.544	1.185	.313
Ownership status	2.530	.136	.580	.452	.097	.903
Annual turnover	.714	.413	1.356	.253	1.323	.274

Significance level is measured at .05.

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

When considering the importance of cellar door sales based on responses of extremely important or very important it was found that Western Australian wineries placed the most importance on cellar door sales (96.6 per cent) and 86.7 per cent of Tasmanian wineries stated that they felt that cellar door sales were important. The figure reported by New Zealand wineries fell under half of that reported by their Australian contemporaries at 43.1 per cent, indicating that New Zealand wineries had opted to diversify away from placing so much emphasis on cellar door sales.

Tasting fee charges

40 per cent of Tasmanian wineries stated that they did charge tasting fees, with all wineries stating that they refunded the full amount of these fees upon purchase. Only 9 per cent of Western Australian wineries responded positively to this question. These wineries also refunded all cellar door visitors if they made a purchase and cited that tasting fees were charged primarily for large groups or bus tours. In comparison 81.5 per cent of New Zealand wineries reported that they charged tasting fees.

Wine availability to local consumers

Cafes and restaurants were the primary location where Tasmanian respondents' wines were locally available (Table 7.6) with 80 per cent choosing this category. This was followed by specialist wine stores (73.3 per cent) and pubs taverns or wine bars (53.3 per cent). A similar pattern emerged for Western Australian wineries who also reported that cafes and restaurants represented the main place where they sold their wines locally (66.7 per cent), with specialist wine stores ranking second (54.5 per cent).

Table 7.6: Places where wines produced can be purchased from if available locally for Tasmanian, Western Australian and New Zealand wineries

	# TAS	% TAS	# WA	% WA	#NZ	% NZ
Cafes or restaurants	12	80.0%	22	66.7%	42	64.6%
Pubs, taverns or wine bars	8	53.3%	17	51.5%	27	41.5%
Supermarkets	2	13.3%	1	3.0%	31	47.7%
Specialist wine stores	11	73.3%	18	54.5%	41	63.1%
Accommodation houses	5	33.3%	7	21.2%	14	21.5%
Other outlets*	0	0.0%	1	3.0%	6	9.2%

*Other outlets cited were workers' clubs (WA); charity events, wine clubs and duty-free outlets (NZ). n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Products

Table 7.7 details the types of products offered by Tasmanian and Western Australian wineries. Company branded merchandise was the leading form of product offered by both Tasmanian wineries (46.7 per cent) and Western Australian wineries (45.4 per cent). General promotional material was ranked second by 40 per cent of Tasmanian respondents, while regional promotional material offered to tourists was ranked in third place (33.3 per cent). Western Australian respondents ranked regionally-based promotional material second (33.3 per cent) and general promotional material third (30.3 per cent). When compared to New Zealand wineries the key difference found was that although New Zealand wineries also recognised the value of company branded merchandise (46.2 per cent), company branded promotional material was also rated highly (38.4 per cent) ahead of regional promotional material (32.3 per cent).

Table 7.7: Types of products offered by Tasmanian, Western Australian and New Zealand wineries

Type of product	# TAS	% TAS	# WA	% WA	#NZ	% NZ
Company branded merchandise	7	46.7%	15	45.4%	30	46.2%
Regional merchandise	4	26.7%	3	12.1%	11	16.9%
Regional promotional material	5	33.3%	11	33.3%	21	32.3%
Promotional material	6	40.0%	10	30.3%	19	29.2%
Company branded promotional material	4	26.7%	7	21.2%	25	38.5%
Other wine merchandise*	5	33.3%	3	9.1%	6	9.2%

*Other wine merchandise that was used included branded wine bottle sleeves, tasting notes which incorporated branding, leather carry bags and bottle bags (TAS); tote bags (WA); wines glasses, wine books and gift packages (NZ).

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Services and facilities

Table 7.8 shows that hosting functions was ranked by Tasmanian wineries as the most important service that they offered visitors (53.3 per cent). Second equal were wine tasting and pairing tastings with food (40 per cent). Western Australian survey participants ranked events and festivals as being the most popular service offered (27.3 per cent) followed by wine tasting in second position (24.2 per cent) and hosting functions in third place (18.2 per cent).

The most popular facilities offered by Tasmanian wineries (Table 7.9) were barbeque areas (53.3 per cent) followed by picnic entertainment areas (46.7 per cent) and barrel halls (33.3 per cent). Western Australian respondents also ranked picnic or entertainment areas as being the most important (36.4 per cent) followed by barrel halls (18.2 per cent) and children's playground facilities (15.2 per cent).

Table 7.8: Services and food at Tasmanian and Western Australian wineries

Service	# TAS	% TAS	Ranking TAS	# WA	% WA	Ranking WA	% NZ	Ranking NZ
Wine tasting	6	40.0%	2	8	24.2%	2	64.6%	1
Winery tours	5	33.3%	3=	4	12.1%	5=	38.5%	2 =
Tasting or snack food	6	40.0%	2=	5	15.1%	4	26.2%	5
Events/festivals	5	33.3%	3=	9	27.3%	1	21.5%	6
Vineyard tours	5	33.3%	3=	4	12.1%	5=	33.8%	3
Host functions	8	53.3%	1	6	18.2%	3	38.5%	2 =
Restaurant	3	20.0%	5	5	15.1%	4	27.7%	4
Host Conferences	4	26.7%	4=	3	9.1%	6=	13.8%	8
Accommodation	3	9.1%	6	3	9.1%	6=	15.4%	7
Entertainment	5	33.3%	3=	3	9.1%	6=	12.3%	9
Other services or food services	4	26.7%	4=	1	3.0%	7	9.2%	10

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand). Note: '=' sign denotes equal placings.

Table 7.9: Facilities at Tasmanian and Western Australian wineries

Facilities	# TAS	% TAS	Ranking TAS	# WA	% WA	Ranking WA	% NZ	Ranking NZ
Picnic entertainment area	7	46.7%	2	12	36.4%	1	33.8%	1
Barrel hall	5	33.3%	3	6	18.2%	2	30.8%	2
Conference facilities	4	26.7%	4	1	3.0%	5=	10.8%	5 =
BBQ area	8	53.3%	1	1	3.0%	5=	12.3%	4 =
Children's playground	3	20.0%	5=	5	15.2%	3	10.8%	5 =
Wine cave	2	13.3%	5=	3	9.1%	4=	12.3%	4 =
Winemaking demonstrations	2	13.3%	5=	3	9.1%	4=	15.4%	3
Historical displays	2	13.3%	5=	1	3.0%	5=	12.3%	4 =
Other facilities	0	0.0%	6	1	3.0%	5=	9.2%	6

*Other facilities listed were art displays (NZ) and concert facilities (WA and NZ).

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Services for people who have disabilities

66.7 per cent of Tasmanian wineries offered wheelchair access to their toilets (Table 7.10), while 60 per cent offered wheelchair access to their tasting room. A further 33.3 per cent also offered wheelchair access to their wine bar or restaurant facilities. A similar pattern was seen to emerge for Western Australian wineries with 60.6 per cent of wineries offering wheelchair access to both their toilets and tasting room facilities. 45.5 per cent of Western Australian wineries offered wheelchair access to the winery itself, which is over double the figure reported by Tasmanian wineries. Overall New Zealand wineries took a much more proactive approach than their Australian counterparts when considering the inclusion of disabled patrons and how accessible winery facilities actually were.

Table 7.10: Wheelchair access offered by Tasmanian, Western Australian and New Zealand wineries

Statement	# TAS	% TAS	# WA	% WA	% NZ
Wheelchair access to tasting room	9	60.0%	20	60.6%	50.8%
Wheelchair access to winery	3	20.0%	15	45.4%	32.3%
Wheelchair access to vineyard	4	26.7%	6	18.2%	24.6%
Wheelchair access to restaurant/wine bar	5	33.3%	4	12.1%	30.8%
Wheelchair access to toilets	10	66.7%	20	60.6%	56.9%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

People who have visual or hearing impairments are poorly served by the wineries surveyed. No Tasmanian respondents provided any services and only one winery in Western Australia did (and as stated by the participant concerned, this was only because they had formerly worked as an optometrist prior to becoming involved in the wine industry). Only 6.2 per cent of New Zealand wineries reported that they offered services for people who have visual or hearing impairments.

7.5 Visitor profile

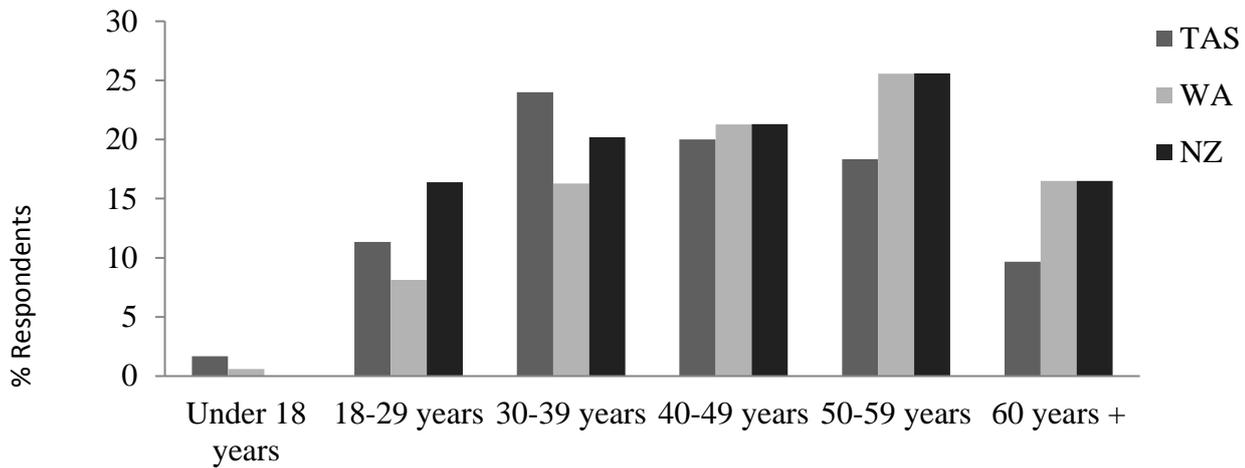
The following section details Tasmanian, Western Australian and New Zealand wineries' perceived visitor attributes in terms of age, gender and origin.

Perceived age, gender and origin breakdown

There was roughly a 50/50 split reported between Tasmanian (Female 49.7%, Male 50.3%) and Western Australian (Female 51.5%, Male 48.5%) wineries. Domestic visitors accounted for a majority of winery visitation (80.3 per cent for Tasmania and 87.4 per cent for Western Australia). In comparison, New Zealand respondents estimated that the domestic market accounted for 58.4 per cent of winery visitors.

Tasmanian wineries reported that the highest number of visitors was in the 30-39 year age group (24.0 per cent), followed by the 40-49 year age group (20 per cent) and the 50-59 year age group (18.3 per cent) (refer to Figure 7.1). Western Australian wineries stated that the most winery visitors came from the 50-59 year age group (25.6 per cent), followed by 40-49 year age group (21.3 per cent) and the 60 year plus age category (16.5 per cent). By way of comparison New Zealand perceived that the highest number of visitors was in the 50-59 year age group (25.6 per cent).

Figure 7.1. Visitor Age for Tasmanian, Western Australian and New Zealand wineries



Wine tour visitation for Tasmanian, Western Australian and New Zealand wineries

Commercial wine tours were found to be used by 40 per cent of Tasmanian respondents, followed by local tour operators (33.3 per cent). Self-guided tours and the use of travel companies ranked third equal at 13.3 per cent each. Both commercial wine tours and local tour operators ranked first equal for Western Australian wineries (63.6 per cent). Self-guided tours and travel companies were both equal at second position on 3 per cent (Table 7.11).

Table 7.11: Wine tour visitation for Tasmanian, Western Australian and New Zealand wineries

Statement	TAS (%)	WA (%)	NZ (%)
Commercial tours visit	40.0%	63.6%	44.6%
Self-guided tours visit	13.3%	3.0%	27.7%
Local tour operators visit	33.3%	63.6%	47.7%
Travel companies visit	13.3%	3.0%	13.8%

*Note: Respondents could choose more than one statement for this question.

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Visitor Information Collection

80 per cent of Tasmanian and 81.8 per cent of Western Australian survey respondents believed that information on visitor numbers and characteristics was of benefit to their business. Mailing lists were the most common form of visitor information collection used at Tasmanian wineries (46.7 per cent), while till receipts were the second most used form (33.3 per cent) (Table 7.12). 33.3 per cent of Tasmanian respondents stated that their winery had no systematic way to collect data on visitor information. Participants who chose the ‘Other methods’ category listed the use of prize draws from competitions and online databases as being the other ways in which information was collected.

The majority of Western Australian wineries reported that they had no systematic way of collecting visitor information (39.4 per cent). For those that did have collection methods available mailing lists and till receipts were listed as the most common forms, ranking in second equal position at 30.3 per cent each. ‘Other methods’ chosen by Western Australian wineries included counting car numbers on weekends, order forms and sign-up forms. Cellar door and restaurant visitor numbers were also cited as being used as for visitor information collection.

35.4 per cent of New Zealand wineries in the 2015 survey also reported not having any systematic way of collection visitor information.

Table 7.12: Visitor information collection methods

Method	TAS (%)	WA (%)	NZ (%)
No systematic way	33.3%	39.4%	35.4%
Mailing list	46.7%	30.3%	29.2%
Surveys	26.7%	0.0%	7.7%
Till receipts	33.3%	30.3%	32.3%
Counters	0.0%	27.3%	32.3%
Other methods	13.3%	12.1%	40.0%

*Note: Respondents could choose more than one method for this question.

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Reasons for visitation to Tasmanian and Western Australian wineries

There were a number of reasons provided for winery visitation at Tasmanian and Western Australian wineries. Tasting wines (86.7 per cent) ranked first for Tasmanian wineries followed by buying wines (73.3 per cent). Western Australian wineries ranked buying wines (87.7 per cent) as the main reason for visitation followed by tasting wines (81.8 per cent) and a day out in third position (48.5 per cent). The patterns exhibited in Table 7.13 of the leading reasons for visitation amongst Tasmanian and Western Australian wineries largely mirror those of New Zealand wineries in the 2015 survey. The one area of difference, however, is that New Zealand wineries appear to be putting more emphasis on winery tours.

Table 7.13: Reasons for winery visitation

Reason	# TAS	% TAS	Rank TAS	# WA	% WA	Rank WA	% NZ	Rank NZ
Tasting wines	13	86.7%	1	27	81.8%	2	64.4%	2
Buying wines	11	73.3%	2	29	87.7%	1	70.8%	1
Learning about wines	6	40.0%	3=	12	36.4%	4=	33.8%	3 =
A day out	5	33.3%	4=	16	48.5%	3	27.7%	4 =
Socialising	5	33.3%	4=	12	36.4%	4=	27.7%	4 =
Winery tour	6	40.0%	3=	7	21.2%	6=	33.8%	3 =
Meeting the winemaker	6	40.0%	3=	7	21.2%	6=	18.5%	5 =
Relaxation	5	33.3%	3=	9	27.3%	5	18.5%	5 =
Festivals or events	3	20.0%	5	7	21.2%	6=	9.2%	7
Organic wines	2	13.3%	6	0	0.0%	8	18.5%	5 =
Other	0	0.0%	7	3	9.1%	7	13.8%	6 =

*Note: Respondents could choose more than one reason for this question.

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Visitor attributes

Visitor Information Collection for Tasmanian and Western Australian wineries

A comparison of perceived visitor market segmentation figures based on Hall's (1996) tripartite typology is shown in Table 7.14. The leading segment for all three survey locations was that of 'Wine interested'. The segment which represented those visitors who were considered to be 'Wine curious' recorded the second highest figure (27.9 per cent) for Tasmanian wineries, while the category of 'Wine lover' ranked third at 24.9 per cent. Western

Australian wineries listed ‘Wine lover’ as their second highest category (31.3 per cent), and those visitors who were thought to be ‘Wine curious’ ranked third at 18.2 per cent.

Table 7.14: Perceived visitor interest in wines at Tasmanian, Western Australian and New Zealand wineries

Location	Wine lover	Wine interested	Wine curious
TAS	24.9%	35.9%	27.9%
WA	31.3%	44.1%	18.2%
NZ	33.9%	42.4%	21.9%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

7.6 Sustainability

Sustainable winegrowing programme certification for Tasmanian and Western Australian wineries

Only 40 per cent of Tasmanian respondents stated that they were currently a member of a sustainable winegrowing programme. In terms of the answers given to this question there appeared to be some confusion amongst the remaining 60 per cent of respondents as to whether there was in fact a locally based sustainable winegrowing programme that they could be a member of. This pointed towards possible problems in the communication between the wineries concerned and those who oversee developing and implementing these programmes in Tasmania. Only 21.2 per cent of their Western Australian counterparts indicated that they were currently members of a certified sustainable winegrowing programme. Both the individual Western Australian and Tasmanian membership figures fall well below the 78.5 per cent SWNZ membership figure reported by New Zealand wineries in the 2015 survey.

Level of commitment towards sustainability

Wineries were given the opportunity to demonstrate their commitment towards sustainable practices. Participants were asked to state whether they were interested in adopting sustainable practices, or were planning to adopt sustainable practices or had already adopted such practices. An option was also provided for those who were not interested in including sustainable practices as part of their business operations.

When asked about the level of commitment that their winery had towards sustainability, 56.3 per cent of Western Australian wineries specified that they had adopted sustainable practices; 6.3 per cent were planning to adopt sustainable practices, while a further 25 per cent confirmed that they were interested in considering adopting these practices. 12.5 per cent of Western Australian wineries asserted that they were not interested in the pursuit of sustainable practices. 86.7 per cent of Tasmanian wineries surveyed stated that they had already adopted sustainable winegrowing practices, while 13.3 per cent reported that they were planning on incorporating sustainability in their business practices. No wineries indicated that they were not interested in sustainability. This demonstrates that Tasmanian wineries have differing attitudes towards whether commitment towards sustainability also entails sustainable winegrowing programme membership.

Table 7.15: Level of commitment towards sustainability amongst Tasmanian, Western Australian and New Zealand wineries

	Not interested in adopting sustainable practices	Interested in adopting sustainable practices	Planning to adopt sustainable practices but not ready yet	Have already adopted sustainable practices
Tasmania	0.0%	0.0%	13.3%	86.7%
Western Australia	12.5%	25.0%	6.3%	56.3%
New Zealand	3.1%	3.1%	0.0%	93.8%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

In order to investigate the impact that sustainability issues were having on Tasmanian and Western Australian wineries a series of statements focused on how their organisation defines sustainability. Statements were based around a five-point Likert scale (1=No impact, 5= Major impact). These results were structured in the same way as the New Zealand results featured in Section 6.5.3 of this thesis, with the first set of topics covering climate change, corporate social responsibility, business viability and whether participants felt that sustainability incorporated the three elements of climate change, environmental, social and economic issues. All the results for this section can also be seen in Table 7.16.

Sustainability and climate change issue awareness

Western Australian wineries appeared to have a greater awareness than their New Zealand counterparts of the impact of climate change issues with 34.4 per cent of survey respondents stating that this area had a lot of impact and 9.4 per cent that it had a major impact on how their organisation perceived sustainability. A further 28.1 per cent indicated that there was some impact from climate change on how their winery viewed sustainability. 15.6 per cent, however, believed that climate change had no impact on their sustainability related practices.

Forty per cent of Tasmanian wineries surveyed believed that organisational definitions of climate change had some impact on climate change, while 33.3 per cent felt that these definitions had a major impact. In Tasmania other environmental issues were deemed to have had a lot of impact on how organisations defined sustainability by 53.3 per cent of Tasmanian winery respondents and 26.7 per cent felt that other issues had a major impact. No Tasmanian respondents reported that they believed that there was either little or no impact caused by other environmental issues. Overall New Zealand wineries place much more emphasis on environmental issues in terms of how they define sustainability than Tasmanian and Western Australian wineries. The New Zealand figure (49.2 per cent) of those who believe that environmental issues have a major impact on how sustainability is defined is double of that of the average Australian figures in this regard.

Sustainability and corporate social responsibility

Corporate social responsibility was perceived as an area where there had been a lot of impact on their winery by 28.1 per cent of Western Australian survey participants. A further 28.1 per cent stated that some impact had been observed on their sustainability practices; 18.8 per cent declared that there had been little impact, while 18.8 per cent of Western Australian wineries reported that there had been no impact at all in this area. Only 6.2 per cent of Western Australian wineries felt that corporate social responsibility had been a major determinant of how their organisation defined sustainability.

The relationship between corporate social responsibility and sustainability also appeared to polarise Tasmanian winery respondents. 33.3 per cent of respondents stated that they felt that corporate social responsibility had some impact on how their winery notion of sustainability. However, 26.7 per cent felt that there was no impact whatsoever; 13.3 per cent thought that little impact was caused, while the remaining participants (13.3 per cent) considered corporate

social responsibility to be a source of major impact on sustainability issues. This particular topic was one which also divided New Zealand wineries in terms of their responses, although it would seem that New Zealand and Australian wineries have differing viewpoints on what constitutes corporate social responsibility within the context of sustainable winegrowing.

Sustainability and business viability

Despite issues of definition and approach, sustainability was perceived as a significant part of the winegrowers' business environment. 43.7 per cent of Western Australian wineries reported that sustainability had a major impact on how their winery viewed business viability which was the highest response reported across all three survey groups. 18.8 per cent reported that they felt that this area had a lot of impact, while a further 18.8 per cent of Western Australian wineries believed that sustainability was responsible for some impact on their business viability. Only 15.6 per cent of West Australian respondents felt that there had been no impact at all on their business.

This pattern of response exhibited by Western Australian wineries was not shared by Tasmanian wineries. 33.3 per cent of Tasmanian wineries surveyed believed that some impact was caused by sustainability on their definition of business viability. 26.7 per cent indicated that a major impact or a lot of impact on business viability resulted. 6.7 per cent of wineries surveyed respectively stated that sustainability had either little or no impact on viability.

In contrast New Zealand wineries reported that 38.5 per cent believed that sustainability had a major impact on the viability of their business. New Zealand participants also recorded the highest amount of responses (21.5 per cent) in regards to whether there was no impact from sustainability on business viability.

Sustainability and biodiversity

Biodiversity was regarded as having a major impact within the context of organisational definitions of sustainability by 53.3 per cent of Tasmanian respondents. 26.7 per cent stated that this had some impact, while the remaining twenty per cent reported that biodiversity had some impact on their organisational definitions. 30.3 per cent of Western Australian wineries believed that these definitions of sustainability had a lot of impact, 27.3 per cent stated that there was some impact caused by biodiversity issues, while 18.2 per cent felt that biodiversity had a lot of impact on their organisations' perspective on sustainability. A deep concern for biodiversity issues is evident amongst all three survey groups.

Sustainability and social justice

Both Tasmanian and Western Australian wineries felt that social justice issues had some impact when considering how organisations defined sustainability, reporting figures of 46.7 per cent and 50 per cent respectively in this category. 33.3 per cent of Tasmanian wineries also felt that some impact arose from social justice issues, while a further 13.3 per cent reported that they believed that social justice issues had a major impact on how their organisation viewed sustainability. Interestingly the second highest category in this regard for Western Australian wineries was the belief that social justice issues had a no impact whatsoever (25 per cent), while 18.3 per cent reported that social justice issues had little impact on their views on sustainability. Only 6.8 per cent stated that they felt this area had a lot of impact. Clearly for Western Australian wineries this was an area which caused a degree of polarisation in opinions. From the New Zealand findings (refer to Chapter 6) social justice issues were an area where the opinions of wineries were also divided. The fact that social justice issues recorded their highest response (35.4 per cent) in the 'No impact' category out of all the groups surveyed is

New Zealand is pertinent given current wine industry issues in terms of the treatment of workers.

Sustainability referring to addressing issues from a long-term perspective

Tasmanian wineries were vocal in their belief that organisational definitions of sustainability should take a long-term perspective; 46.7 per cent of wineries stated that this viewpoint had a major impact, while 20 per cent of wineries stated that this had a lot of impact. The remaining Tasmanian wineries surveyed were divided on taking a long-term viewpoint towards sustainability, with 13.3 per cent stating that this perspective had some impact, 6.7 per cent indicating that it had little impact, and the remaining 13.3 per cent stating that taking a long-term perspective had little impact.

Western Australian wineries also recorded their highest percentage of responses when asked whether sustainability should be defined from a long-term perspective with 39.4 per cent stating this had a major impact. 27.3 per cent of respondents indicated that they thought this viewpoint had a lot of impact; 21.2 per cent felt that some impact resulted from taking a long-term approach, while the lowest rate of response was in either the little or no impact categories with 6.1 per cent recorded in each of these two categories.

New Zealand wineries recorded the highest level of responses in the 'Major impact' category (50.8 per cent) amongst the three survey groups in terms of taking a long-term vision with regards to sustainability. When compared to the Australian figures it would appear that survey participants from both countries are aware that the adoption of sustainable winegrowing practices entails long-term commitment and is not something to be disregarded as a passing trend.

Table 7.16: How Tasmanian, Western Australian and New Zealand wineries define sustainability

How organisation defines sustainability	TAS						WA						NZ					
	No impact	Little impact	Some impact	A lot of impact	Major impact	Mean	No impact	Little impact	Some impact	A lot of impact	Major impact	Mean	No impact	Little impact	Some impact	A lot of impact	Major impact	Mean
Refers to climate change	6.7%	20.0%	40.0%	0.0%	33.3%	3.33	15.6%	12.5%	28.1%	34.4%	9.4%	3.06	24.6%	44.6%	18.5%	9.2%	27.7%	2.95
Refers to corporate social responsibility issues	26.7%	13.3%	33.3%	13.3%	13.3%	2.73	18.8%	18.8%	28.1%	28.1%	6.2%	2.88	23.1%	10.8%	6.2%	29.2%	30.8%	3.34
Refers to maintaining the viability of the business	6.7%	6.7%	33.3%	26.7%	26.7%	3.60	15.6%	3.1%	18.8%	18.8%	43.7%	3.76	21.5%	7.7%	15.4%	16.9%	38.5%	3.43
Incorporates climate change, environmental, social and economic issues	6.7%	0.0%	13.3%	20.0%	60.0%	4.27	9.4%	0.0%	25.0%	18.8%	46.9%	4.00	7.7%	3.1%	10.8%	18.5%	40.0%	4.20
Refers to meeting the needs of the current generation	13.3%	0.0%	0.0%	20.0%	66.7%	4.27	9.4%	12.5%	18.8%	34.4%	24.0%	3.70	15.4%	4.6%	12.3%	16.9%	50.8%	3.83

Table 7.16: How Tasmanian, Western Australian and New Zealand wineries define sustainability (continued)

	TAS						WA						NZ					
How organisation defines sustainability	No impact	Little impact	Some impact	A lot of impact	Major impact	Mean	No impact	Little impact	Some impact	A lot of impact	Major impact	Mean	No impact	Little impact	Some impact	A lot of impact	Major impact	Mean
Refers to biodiversity issues	0.0%	0.0%	26.7%	20.0%	53.3%	4.27	15.6%	9.4%	28.1%	31.3%	15.6%	3.27	13.8%	10.8%	13.8%	29.2%	32.3%	3.55
Refers to social justice issues	6.7%	33.3%	46.7%	0.0%	13.3%	2.80	25.0%	18.8%	0.0%	50.0%	6.3%	2.45	35.4%	12.3%	13.8%	27.7%	10.8%	2.66
Refers to environmental issues	6.7%	6.7%	33.3%	26.7%	26.7%	3.60	9.4%	9.4%	31.3%	31.3%	18.8%	3.39	16.9%	0.0%	4.6%	29.2%	49.2%	3.94
Refers to addressing issues from a long-term perspective	13.3%	6.7%	13.3%	20.0%	46.7%	3.80	6.3%	6.3%	18.8%	28.1%	40.6%	3.88	20.0%	7.7%	9.2%	12.3%	50.8%	3.66

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

A comparison of how the organisational definitions of sustainability differ between Tasmanian, Western Australian and New Zealand wineries based on their level of commitment to sustainability is shown in Table 7.17. Conducting a statistical analysis using an ANOVA found that there were no significant factors for Tasmanian wineries, while New Zealand wineries reported that meeting the needs of the current generation was significant at the .05 level of significance ($F = 3.329$, $Sig. = .042$). Western Australian wineries listed climate change (8.404, $Sig. = .000$), maintaining the viability of the business ($F = 4.583$, $Sig. = .010$), biodiversity issues ($F = 11.292$, $Sig. = .000$) and social justice issues ($F = 6.289$, $Sig. = .002$) as significant factors at the .05 level of significance.

Table 7.17: How Tasmanian, Western Australian and New Zealand wineries define sustainability based of level of commitment

How organisation defines sustainability	TAS F	TAS Sig	WA F	WA Sig	NZ F	NZ Sig.
Refers to climate change	.549	.472	8.404	.000	.177	.838
Refers to corporate social responsibility issues	2.072	.174	1.463	.245	.219	.804
Refers to maintaining the viability of the business	.575	.462	4.583	.010	.529	.592
Incorporates climate change, environmental, social and economic issues	.114	.741	2.921	.051	2.090	.132
Refers to meeting the needs of the current generation	.628	.442	2.271	.101	3.329	.042
Refers to biodiversity issues	.151	.704	11.292	.000	1.281	.285
Refers to social justice issues	3.304	.092	6.289	.002	.251	.779
Refers to environmental issues	.867	.369	1.463	.245	.428	.654
Refers to addressing issues from a long-term perspective	1.595	.229	3.165	.038	2.971	0.59

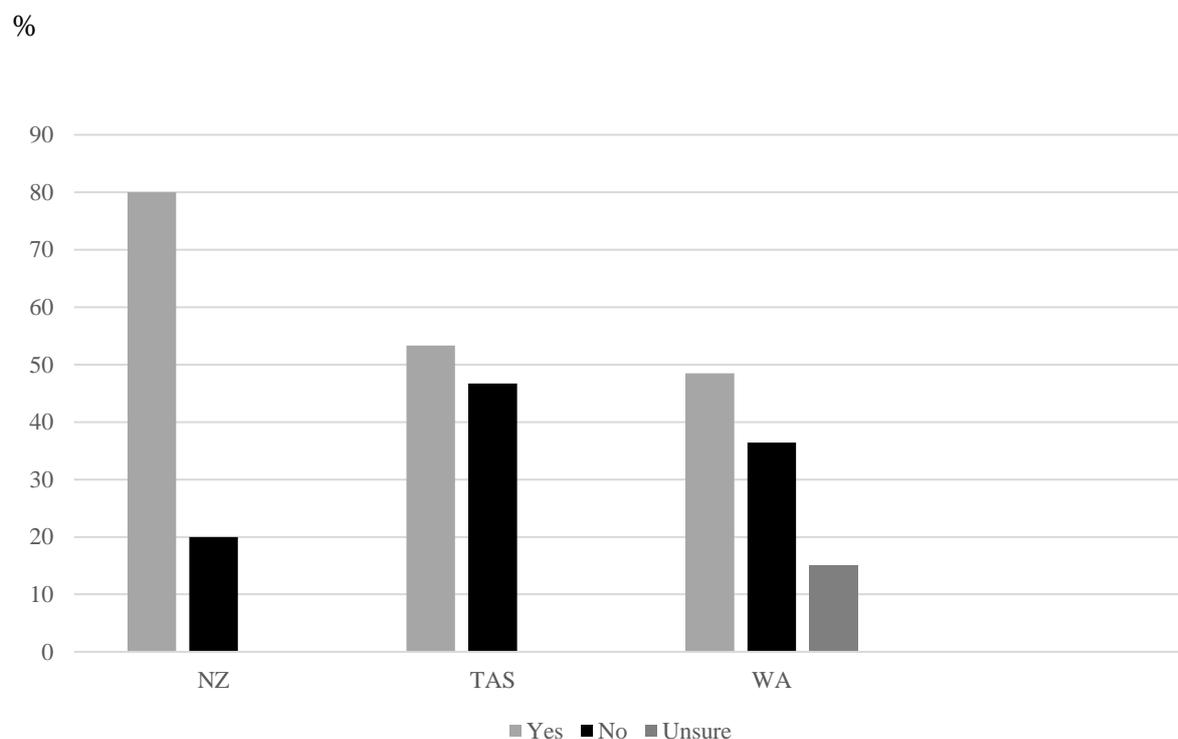
Significance level is measured at .05.

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Winery development of a business case to address sustainability

When consideration was given to whether wineries felt that they had developed a business case to address sustainability (see Figure 7.2), 53.3 per cent of Tasmanian wineries stated that believed that they had developed a clear business case to address sustainability compared to 48.5 per cent of Western Australian. Comparing these figures to those that were taken from the New Zealand survey it is clear that the fact that 80 per cent of New Zealand wineries stated that they had developed a clear business case to address sustainability is indicative of the mandatory nature of the SWNZ programme. As the Australian programmes are voluntary in nature there is less pressure on wineries to consider the viability of undertaking sustainable practices, and this is reflected in the lower percentages reported who responded positively to this question.

Figure 7.2. Winery has a business case to address sustainability for New Zealand, Tasmanian and Western Australian wineries



7.7 Importance of sustainability practices

In this part of the survey participants were asked to respond to a series of statements based on the level of importance that they perceived the topics concerned had for sustainable practices at their winery (Table 7.18), and this was structured in the same way as the New Zealand results in Section 6.5.13 of this thesis. Statements were asked utilising a five point Likert scale (1=Not at all important, 5= Extremely important) and focused on the areas of employee recruitment, morale and retention, obtaining greater operational efficiency, improving customer loyalty and the ability for wineries to enter new markets. Further statements were asked based on migrant workers' rights, the provision of more revenue sources, the ability to justify a price premium for products, attracting winery visitation and lowering legal and regulatory risk.

Importance of sustainability for obtaining a stronger brand with greater pricing power

The ability to obtaining a stronger brand which commanded a greater pricing power was cited as being important by 40 per cent of Tasmanian wineries. A further 33.3 per cent stated it was very important, while 20 per cent indicated that they believed that sustainability had an extremely important impact in this area. The remaining 6.7 per cent of Tasmanian wineries surveyed felt it was somewhat important, and none of the respondents believed that this area was of no importance.

Western Australian wineries showed a similar pattern in terms of their sentiment with 33.3 per cent of wineries surveyed stating that this was an important area, while 30.3 per cent declaring it was very important and 15.2 per cent felt that it was somewhat important. The key difference here from their Tasmanian counterparts was that 12.1 per cent of Western Australian wineries believed that impact of sustainability in terms of providing the ability stronger brand with greater pricing power was not important at all. The remaining 9.1 per cent of respondents were

found at the other end of the spectrum however and believed that this was extremely important in terms of leveraging pricing power through having a strong brand.

New Zealand wineries were definitely more conservative in terms of their evaluation of this topic with 29.2 per cent of New Zealand wineries declaring it as being of 'No importance', which was the highest response out of the three groups involved in this study. The category of 'Important' (16.9 per cent) for New Zealand wineries was also under half of what Tasmanian and Western Australian wineries reported. This illustrates the indifference felt by New Zealand wineries felt towards using sustainability as a tool to achieve greater pricing power in the marketplace.

Importance of sustainability on employee recruitment, morale and retention

For Tasmanian wineries the issues of employee recruitment, morale and retention were viewed as important by 46.7 per cent wineries; 26.7 per cent felt the impact of sustainability of these areas was somewhat important, while 20 per cent cited that they saw the impact as being very important. 6.7 per cent stated that these issues were extremely important when considered within the context of sustainability.

The majority of Western Australian wineries (42.4 per cent) indicated that these three areas were also important to them; 24.2 per cent stated that that they would consider these issues very important, while 15.2 per cent stated that they felt the impact of sustainability in this regard was extremely important. 9.1 per cent respectively responded that these areas were either somewhat important or of no importance at all.

Compared to the Australian results there appears to be a division of opinion amongst New Zealand wineries within this topic area. This suggests that for employees having knowledge of

sustainable business practices is not as valued in the New Zealand wine industry as it appears to be within the Australian wine industry in terms of attracting and retaining winery workers.

Importance of sustainability on obtaining greater operational efficiency

Obtaining greater operational efficiency through sustainable practices was cited as being very important for Tasmanian wineries (53.3 per cent). 26.7 per cent stated that this was important, while the remaining 20 per cent viewed this matter as being of extreme importance. Western Australian wineries, however, exhibited a greater divide in terms of opinion over this issue. 45.5 per cent of wineries surveyed stated that greater operational efficiency through sustainable practices was important, while 18.2 per cent respectively responded that it their position was that it was either very important or somewhat important. 6.1 per cent believed this was an extremely important issue, while the remaining 12.1 per cent of Western Australian participants felt that this was on no importance to their sustainable practices whatsoever.

This topic was one where Australian and New Zealand wineries both recognised the importance of achieving greater operational efficiency. However, 23.1 per cent of New Zealand wineries stated that greater operational efficiency through sustainable practices was not important to their winery. This particular finding suggests that within the New Zealand wine industry there needs to be further education aimed at wineries which underlines the operational efficiencies which can be acquired through sustainable business practices.

Importance of sustainability on obtaining improved customer loyalty

The majority of Tasmanian wineries surveyed viewed the importance of sustainability on obtaining improved customer loyalty as being important to their business with 73.3 per cent of respondents choosing this category. A further 20 per cent stated that it was very important,

while only 6.7 indicated it was somewhat important. No Tasmanian wineries stated that sustainable practices had no impact whatsoever on building customer loyalty.

Western Australian wineries again displayed a division in opinion over this matter; 33.3 per cent listed the improvement of customer loyalty as being an extremely important reason for the adoption of sustainable practices. 21.2 per cent respectively stated that improved customer loyalty was either important or very important in terms of sustainable business considerations. For the remaining categories 12.1 per cent of Western Australian wineries respectively stated that customer loyalty was either somewhat important as a consideration or of no importance whatsoever. There was also some division over this topic for New Zealand wineries as well with 27.7 per cent stating improving customer loyalty through the use of sustainable practices was not important, while 30.8 per cent of New Zealand viewed sustainability as being important in order to attract improved customer loyalty.

Importance of sustainability on the enhanced ability to enter new markets

46.7 per cent of Tasmanian wineries believed that sustainability was very important on their enhanced ability to enter new markets; 33.3 per cent viewed this ability as important, while the remaining 20 per cent thought that sustainability was extremely important for making new market entry a smoother process. Western Australian wineries indicated that 36.4 per cent of respondents viewed the enabling of market entry through following sustainable practices as extremely important. 27.3 per cent stated that they felt that this was important, and 24.2 per cent reported that they felt that the enhanced ability to enter new markets was very important. 6.1 per cent of Western Australian wineries respectively indicated that this ability was either somewhat important or not important at all to their winery.

Comparing the Australian results to the New Zealand figures it is evident that a division of opinion was evident amongst New Zealand wineries on this topic. New Zealand recorded the

highest level of respondents (29.2 per cent) who viewed sustainability as not important at all for new market entry, and also the lowest response (16.9 per cent) for those who thought it was extremely important. This suggests that if New Zealand wineries were able to see some tangible evidence of sustainable practices facilitating new market entry for them that wine producers overcome their current degree of scepticism regarding this issue.

Importance of sustainable practices in terms of migrant workers' rights

When asked about the importance of migrant workers' rights in the context of sustainable practices 53.3 per cent of Tasmanian wineries reported that they believed this issue to be very important. 26.7 per cent went even further by stating their belief to be that this was extremely important, while the remaining 20 per cent surveyed indicated that they also believed the issue was important. No Tasmanian respondents stated that migrant workers' rights were either somewhat important or of no importance.

Western Australian wineries also deemed this issue to be very important with 45.5 per cent of respondents stating that they felt migrant workers' rights were very important. 33.3 per cent of respondents indicated that they felt this issue was important, while 9.1 per cent stated their belief that this issue was somewhat important. 6.1 per cent of Western Australian respondents respectively could be found at opposing ends of the spectrum in terms of their viewpoints on migrant workers' rights with the same percentage believing that this issue was either extremely important or not important at all.

New Zealand wineries reported the highest level (47.7 per cent) in the 'Not important' category out of all three groups of survey respondents when considering migrant workers' rights. The difference in attitude towards this topic between New Zealand and Australian wineries can also be seen through the figures reported in the 'Very important' category; New Zealand reports 4.6

per cent in this category, compared to Tasmania (53.3 per cent) and Western Australia (43.8 per cent). New Zealand's lack of interest in this issue can also be witnessed in participants' apparent apathy towards social justice issues.

Importance of sustainable practices for providing more potential sources of revenue

46.7 per cent of Tasmanian wineries reported that sustainability practices were important in terms of providing potential sources of business revenue. A further 33.3 per cent stated that they viewed this additional revenue as being very important to their winery, while 13.3 per cent indicated that this was extremely important. 6.7 per cent of Tasmanian respondents reported that sustainable practices providing potential sources of revenue was somewhat important. No Tasmanian survey participants cited that this benefit was of no importance.

A similar pattern emerged with Western Australian wineries; 39.4 per cent indicated that the revenue obtained as a result of sustainable practices was important, while 21.2 per cent of respondents felt that this was very important. 18.2 per cent of Western Australian participants reported that sustainable practices were somewhat important for providing additional sources of revenue. 12.1 per cent of wineries believed that sustainability was of no importance in this regard, while the remaining 9.1 per cent categorised sustainable practices as being extremely important in providing revenue growth.

New Zealand wineries viewed the ability of sustainable practices to provide further potential sources of revenue for wineries with caution. As a result they reported the highest amount (43.1 per cent) who stated that this was not an important source of obtaining revenue, whilst a further 21.5 per cent stated it was 'Somewhat important'. Once again, this underpins that it is important for New Zealand wineries to see the direct benefits of sustainable practices in terms of a dollar

value, whereas Australian wineries believe it is an important factor in terms of achieving revenue growth.

Importance of sustainable practices on lowering financial and operating risk

Whether sustainable practices were capable of contributing to lowering financial and operating risk divided opinions amongst Tasmanian winery survey respondents. 46.7 per cent stated that this was an important consideration, while both 20 per cent respectively thought this was either somewhat important or very important in terms of their risk mitigation process. The remaining 13.3 per cent of Tasmanian wineries cited that a lower level of financial and operating risk was extremely important.

Western Australian survey respondents also thought that this was an important area of impact (42.4 per cent). 30.3 per cent of wineries believed that sustainable practices were somewhat important in terms of helping to lower financial and operating risk, while 15.2 per cent stated that it was not important at all. Of the remaining Western Australian wineries surveyed 9.1 per cent indicated that they felt the impact of sustainability on these areas was extremely important, while 3 per cent reported that they felt this impact was very important for their winery.

New Zealand wineries once again approached this issue with caution with 43.1 per cent of respondents stated that this was not important to them, and 15.4 per cent regarded it as somewhat important. When considering all three survey groups it appears that Western Australian wineries appeared to have the most positive response to this question. This indicates that for New Zealand and Tasmanian wineries there might be room for greater degree of education in terms of the advantages that employing sustainable practices can potentially offer wineries when it comes to considering financial and operating risks.

Importance of sustainable practices on the ability to justify a price premium for products

The belief that sustainable practices had an impact on the ability to justify price premiums for wine products was also noted as being important to 40.6 per cent of Western Australian wineries surveyed. A further 21.9 per cent stated that they felt this was very important, while 15.6 per cent respectively declared that they felt this was either of extreme importance or somewhat important. The remaining 6.3 per cent of respondents reported that they believed sustainable practices were of no importance at all when considering asking for premium price at the point of sale.

Tasmanian wineries viewed sustainable practices as being very important for achieving price premiums for their products with 46.7 per cent of respondents choosing this option. 33.3 per cent stated that they believed the impact of sustainability in this domain was important, while the remaining 20 per cent felt it was extremely important. No Tasmanian wineries stated that they felt that this issue was either somewhat important or of no importance whatsoever.

Using sustainable practices to justify price premiums in the marketplace was viewed as being important by 36.9 per cent of New Zealand survey respondents, although a division was seen here as well with 23.1 per cent of New Zealand respondents feeling that sustainability derived price premiums were not important. It would appear that this issue is one where Tasmanian wineries appear to feel more comfortable with than their New Zealand or Western Australian based counterparts.

Importance of sustainable practices on attracting winery visitation

Western Australian wineries held differing perspectives on whether sustainable practices helped to attract winery visitation. 31.3 per cent of participants reported that sustainable practices were important for attracting wine tourists, while 28.8 per cent indicated that this was somewhat important to their business operations. 18.8 per cent felt that attracting wine tourists

was very important, while 15.6 per cent stated that this was not important whatsoever. The remaining 6.3 per cent reported that sustainable business practices were extremely important in terms of attracting visitors to their wineries.

The impact of sustainable practices on wine tourism was also noted by Tasmanian wineries with 40 per cent of respondents declaring that they felt this was important for their business, which was the highest figure for this category over the three survey groups. A further 26.7 per cent respectively stated that they believed that attracting wine tourists through engaging in sustainable practices was either very important or somewhat important. Only 6.7 per cent of Tasmanian wineries surveyed indicated that they felt that this area was of no importance.

New Zealand wineries appeared to have a spectrum of differing viewpoints when considering this topic. 36.9 per cent of respondents indicated that they felt that sustainable practices were important in this regard; however, 30.8 per cent also felt that sustainable practices were not all important in terms of attracting wine tourists.

Importance of sustainable practices on lowering legal and regulatory risk at New Zealand, Tasmanian and Western Australian wineries

There was a similar spread of responses from Western Australian wineries to this question. 31.3 per cent of wineries surveyed stated that sustainable practices were important when considering lowered levels of legal and regulatory risk; 25 per cent respectively stated that the ability to control these levels of risk through sustainable practices was either very important or extremely important. Of the remaining respondents 12.5 per cent stated that the impact of this on their winery was somewhat important, while 6.3 per cent indicated that this was of no importance to them whatsoever.

Tasmanian wineries considered the impact of sustainable practices in this area to be important, with 60 per cent of respondents choosing this option. 20 per cent of wineries surveyed indicated that they felt that this issue was extremely important, while a further 13.3 per cent viewed the lowering of these risks as being very important. The remaining 6.7 per cent of Tasmanian survey respondents replied that they thought that this was somewhat important, while no respondents stated that they felt that this issue was not important.

For New Zealand wineries the impact of sustainable practices on lowering legal and regulatory risk divided survey participants. The greatest number of responses featured in the 'not important' category (27.7 per cent), while the least were reported in the 'Extremely important' category (10.8 per cent). The lack of consensus by New Zealand wineries on this topic echoed the range of responses exhibited by Western Australian wineries.

Table 7.18: Importance of sustainable practices for Tasmanian, Western Australian and New Zealand wineries

Sustainable practice	TAS						WA						NZ					
	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean
Stronger brand/greater pricing power	0.0%	6.7%	40.0%	33.3%	20.0%	3.67	12.5%	15.6%	34.4%	28.1%	9.4%	3.09	29.2%	23.1%	16.9%	13.8%	16.9%	2.66
Employee recruitment, morale and retention	0.0%	26.7%	46.7%	20.0%	6.7%	3.07	9.4%	40.6%	25.0%	25.0%	15.6%	3.27	27.7%	13.8%	24.6%	18.5%	15.4%	2.80
Greater operational efficiency	0.0%	0.0%	26.7%	53.3%	20.0%	3.93	12.5%	18.8%	43.8%	18.8%	6.3%	2.88	23.1%	16.9%	23.1%	24.6%	12.3%	2.86
Improved customer loyalty	0.0%	6.7%	73.3%	20.0%	0.0%	3.13	12.5%	12.5%	21.9%	21.9%	31.3%	3.52	27.7%	12.3%	30.8%	16.9%	12.3%	2.74
Enhanced ability to enter new markets	0.0%	0.0%	33.3%	46.7%	20.0%	3.87	6.3%	6.3%	28.1%	25.0%	34.4%	3.79	29.2%	7.7%	30.8%	20.0%	12.3%	2.78
Migrant workers' rights	0.0%	0.0%	20.0%	53.3%	26.7%	4.07	6.3%	9.4%	34.4%	43.8%	6.3%	3.36	47.7%	13.8%	26.2%	4.6%	7.7%	2.11

Table 7.18: Importance of sustainable practices for Tasmanian, Western Australian and New Zealand wineries (continued)

Sustainable practice	TAS						WA						NZ					
	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean
More potential sources of revenue	0.0%	6.7%	46.7%	33.3%	13.3%	3.53	12.5%	18.8%	37.5%	21.9%	9.4%	2.97	35.4%	21.5%	27.7%	3.1%	12.3%	2.35
Lower financial and operating risk	0.0%	20.0%	46.7%	20.0%	13.3%	3.27	15.6%	28.1%	43.8%	3.1%	9.4%	2.61	43.1%	15.4%	21.5%	9.2%	10.8%	2.29
Ability to justify price premium for products	0.0%	0.0%	33.3%	46.7%	20.0%	3.87	6.3%	15.6%	40.6%	21.9%	15.6%	3.24	23.1%	18.5%	36.9%	7.7%	13.8%	2.71
Attracting visitors to winery	6.7%	26.7%	40.0%	26.7%	0.0%	2.87	15.6%	28.1%	31.3%	18.8%	6.3%	2.70	30.8%	16.9%	36.9%	7.7%	7.7%	2.44
Lower legal and regulatory risk	0.0%	6.7%	60.0%	13.3%	20.0%	3.47	6.3%	12.5%	31.3%	25.0%	25.0%	3.48	27.7%	20.0%	23.1%	18.5%	10.8%	2.65

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Comparing how Tasmanian, Western Australian and New Zealand wineries view the impact of sustainability practices based on their level of commitment to sustainability is detailed in Table 7.19. After conducting statistical analysis using an ANOVA it was found that there were no significant factors for Tasmanian and New Zealand wineries based on their level of commitment to sustainability. Western Australian wineries, however, had a number of significant factors at the .05 level of significance. These were achieving a stronger brand and greater pricing power ($F = 14.213$, $\text{Sig.} = .000$), employee recruitment, morale and retention ($F = 3.296$, $\text{Sig.} = .034$) and obtaining greater operational efficiency ($F = 8.858$, $\text{Sig.} = .000$). Other significant factors for Western Australian wineries were the enhanced ability to enter new markets ($F = 3.261$, $\text{Sig.} = .036$), creating more potential sources of revenue ($F = 9.281$, $\text{Sig.} = .000$), lower financial and operating risk ($F = 4.470$, $\text{Sig.} = .011$) and attracting winery visitors ($F = 4.585$, $\text{Sig.} = .010$). These results show that for Western Australian wineries a higher level of commitment towards sustainability led to a higher perceived importance for these particular factors.

Table 7.19: How Tasmanian, Western Australian and New Zealand wineries view the impact of sustainability practices based on their level of commitment to sustainability

Sustainable practice	TAS F	TAS Sig	WA F	WA Sig	NZ F	NZ Sig.
Stronger brand/greater pricing power	.301	.593	14.213	.000	.064	.938
Employee recruitment, morale and retention	.012	.914	3.296	.034	.662	.519
Greater operational efficiency	.867	.369	8.858	.000	.147	.863
Improved customer loyalty	.144	.710	.632	.600	.620	.541
Enhanced ability to enter new markets	.069	.796	3.261	.036	.343	.711
Migrant workers' rights	5.308	.038	2.373	.091	.238	.789
More potential sources of revenue	3.700	.077	9.281	.000	.147	.863
Lower financial and operating risk	.167	.689	4.470	.011	.300	.742
Ability to justify price premium for products	.069	.796	.880	.720	.053	.948
Attracting visitors to winery	.046	.834	4.585	.010	.134	.875
Lower legal and regulatory risk	.770	.396	2.514	.078	.486	.617

Significance level is measured at .05.

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

7.8 The potential benefits of sustainability

For this section of the survey participants were asked to respond to a series of statements based on the potential benefits of sustainability for their winery (Table 7.20). Statements were asked utilising a five point Likert scale (1=Not at all important, 5= Extremely important).

The potential benefits of sustainability for building consumer awareness of wineries

The value or sustainable practices within the context of building consumer awareness was viewed by Western Australian wineries in a similar fashion to the polarity of responses that New Zealand wineries also held. 40.6 per cent of Western Australian wineries surveyed stated that they felt that this was important to their business, while 21.9 per cent indicated that they felt utilising sustainability to develop awareness was somewhat important. 15.6 per cent perceived the benefits gained in this area to be extremely important to their winery, while a further 9.4 per cent list this as being very important. The remaining 12.5 per cent reported that

they believed that sustainable practices were not important in building consumer awareness of their winery.

Even more defined viewpoints were held by Tasmanian wineries in terms of this question. 46.7 per cent of respondents stated that consumer awareness of their winery through sustainable practices was very important, while a further 40 per cent stated they felt that creating this awareness was important to their business. 13.3 per cent judged this area to be extremely important to their winery, while no responses were recorded in the categories of ‘Somewhat important’ or ‘Not important at all.’ The majority of New Zealand wineries by way of comparison felt that this topic was of no importance (29.2 per cent) or somewhat important (26.2 per cent), and only 13.8 per cent felt it was extremely important.

The potential benefits of eco-labels for company and product branding at New Zealand, Tasmanian and Western Australian wineries

28.1 per cent of Western Australian wineries surveyed indicated that they viewed eco-labelling as important to their company and product branding, while 25 per cent viewed eco-labelling as being extremely important to their winery. 21.9 per cent stated that they felt that this had a somewhat important impact on their business; 15.6 per cent reported that they felt that eco-labelling was very important, while 9.4 per cent declared that it was of no importance at all to their business.

Tasmanian wineries were very adamant in their support of eco-labelling. 60 per cent of participants declared that they felt that the benefits derived from eco-labelling were extremely important to their winery; a further 26.7 per cent stated that they believed this aspect of their business was important, while the remaining 13.3 per cent indicated that they viewed eco-labelling as very important. No Tasmanian wineries responded that they felt this area was somewhat important or was of no importance at all.

New Zealand wineries held a diverse range of viewpoints on this topic and did not share the enthusiasm of Tasmanian and Western Australian wineries towards eco-labelling. Only 13.8 per cent of New Zealand wineries stated that eco-labelling was extremely important, while 29.2 per cent of wineries surveyed stated that this was not important. The difference in opinion noted in the response from New Zealand wineries shows that they are somewhat cynical towards the benefits that they have derived from featuring eco-labels on their bottles. This suggests that education amongst New Zealand wine consumers in regard to what particular eco-labels represent is something that both SWNZ and local wine producers should be considering.

The potential benefits of sustainability for reducing or eliminating greenhouse gas emissions at New Zealand, Tasmanian and Western Australian wineries

46.9 per cent of Western Australian wineries reported that they viewed the benefits of sustainability in the area of greenhouse gas emission reduction and elimination as being important. 25 per cent indicated that this was very important to their winery, while a further 12.5 per cent reported that they did not value the importance of the benefits which sustainable practices could potentially provide within the context of this issue at all. 9.4 per cent of respondents stated that they felt that these potential benefits were somewhat important, while only 6.3 per cent of respondents declared that they thought that the use of sustainable practices for greenhouse gas emission reduction and elimination was extremely important.

The elimination of greenhouse gas emissions was reported by 53.3 per cent of Tasmanian wineries as being very important. 26.7 per cent responded that they felt that this issue was extremely important, whilst the remaining 20 per cent indicated that this was still an important pursuit for their business. No Tasmanian participants stated that this area was of limited or no importance to them.

When compared with these Australian results New Zealand wineries are seen to have the lowest reported response to the ‘Very important’ category (27.7 per cent). The figure reported (20 per cent) for New Zealand who viewed the reduction or elimination of greenhouse gas emissions as not important in terms of a benefit derived from sustainability is also of concern. It would appear that more education of the potential benefits which sustainable winegrowing can offer in terms of helping to reduce greenhouse gas emissions is required with the New Zealand wine industry.

The potential benefits of sustainability for New Zealand, Tasmanian and Western Australian wineries in terms of supplier and distributor relationships

Western Australian wineries took a somewhat diametric viewpoint to the New Zealand wineries surveyed over this issue. 40.6 per cent of Western Australian wineries reported that sustainable practices were important for their supplier and distributor relationships, while a further 21.9 per cent of wineries stated that this was somewhat important. 18.8 per cent reported that this was an area that they valued as being very important for their winery. New Zealand wineries on the other hand had stated that the benefits derived of no importance (29.2 per cent) or indicated that this was somewhat important to their winery (21.5 per cent).

Tasmanian wineries echoed the pattern set by their Western Australian counterparts with 46.7 per cent of wineries declaring that sustainable practices were important for gaining potential benefits from supplier and distributor relationships. A further 20 per cent respectively stated that this was either extremely important or very important, while the categories of ‘Not important’ and ‘Somewhat important’ were equal with 6.7 per cent of responses apiece.

The potential benefits of sustainability for New Zealand, Tasmanian and Western Australian wineries in terms of the development of new business opportunities

34.4 per cent of Western Australian participants indicated that the development of new business opportunities was extremely important for their business, while a further 25 per cent reported that they saw this benefit derived from sustainable practices as very important. 18.8 per cent of respondents stated that they believed this was important to their business operations.

46.7 per cent of Tasmanian wineries surveyed declared that engaging in sustainable practices were important for allowing new business opportunities to develop; 20 per cent of respondents respectively stated that they also felt this was either extremely important or very important for their winery. Those participants who viewed the potential benefits of sustainability as having no importance (6.7 per cent) in this regard or only being somewhat important (a further 6.7 per cent) made up the remainder of responses received.

New Zealand wineries were much more divided over this issue than Tasmanian and Western Australian wineries. This saw New Zealand wineries record the highest amount (24.6 per cent) across all three groups for those who stated that sustainability was of no importance in aiding the development of new business opportunities. However, New Zealand participants also recognised that sustainability was either extremely important (21.5 per cent) or very important (18.5 per cent) which is similar to the opinions held by the Australian survey respondents towards this topic.

The potential benefits of sustainability in terms of helping wineries to reduce energy consumption

Western Australian wineries reported that they believed the benefits derived from sustainability were either important (28.1 per cent), very important (25 per cent) or regarded as being extremely important (18.8 per cent). Tasmanian wineries indicated that 40 per cent of respondents believed that this topic was of extreme importance; 33.3 per cent stated that they felt that the potential benefits of sustainable in terms of the reduction of energy consumption

were very important, while the remaining 26.7 per cent of wineries surveyed reported that they regarded this issue as being important.

New Zealand wineries were in agreement with Tasmanian and Western Australian wine producers over this issue with 23.1 per cent stating this was of extreme importance, while a further 23.1 per cent reported that they felt this issue was important. 21.5 per cent of New Zealand participants believed this area was very important and only 16.9 per cent of respondents to the New Zealand survey felt that the reduction of energy consumption was only somewhat important when considering the potential benefits to be derived from sustainable practices.

The potential benefits of sustainability for wineries in terms of waste reduction

Western Australian survey participants indicated that 37.5 per cent valued the potential benefits of sustainability for waste reduction as important; 21.9 per cent stated that this aspect of sustainability was somewhat important to their business practices, while 18.8 per cent felt that it was very important. 12.5 per cent stated that sustainable waste reduction was extremely important, while the remaining 9.4 per cent viewed this issue as not important at all.

The majority of Tasmanian respondents held the viewpoint that waste reduction was very important (60 per cent), while 26.7 per cent stated that they felt this topic was extremely important; the remaining 13.3 per cent of Tasmanian participants stated that they felt the potential benefits derived from waste reduction were important to them. No Tasmanian wineries stated that waste reduction was of no importance or only somewhat important to them.

Comparing these New Zealand results to the Australian figures sees agreement with the pattern exhibited by Tasmanian wineries. However, Table 7.18 also reveals a disparity between the attitudes of New Zealand winegrowers versus those of Western Australian winegrowers when

considering the importance of benefiting from practicing sustainable waste reduction methods. The potential benefits of sustainability in terms of aiding waste reduction was seen to be very important to 40 per cent of New Zealand winery respondents, while a further 20 per cent stated that they felt that these benefits were of extreme importance.

The potential benefits of sustainability for wineries in terms of the reduction of toxicity of harmful chemicals

37.5 per cent of Western Australian survey respondents viewed the reduction of toxicity of harmful chemicals as being very important to them; 31.3 per cent stated that they believed it to be important, while 18.8 per cent felt that the reduction of chemical toxicity was extremely important. 9.4 per cent reported that this issue was not important at all, while the remaining 3.1 per cent responded by declaring that this area was somewhat important to them.

Tasmanian wineries on the other hand viewed this issue to be either extremely important (53.3 per cent) or very important (46.7 per cent). Of interest here is that no Tasmanian wineries selected any of the other categories available, thereby indicating that the reduction of chemical toxicity through sustainable practices is an issue that Tasmanian survey respondents believe to be high on the agenda in terms of their overall sustainable business practices. New Zealand wineries were also in agreement with their Australian contemporaries regarding the importance of this issue with the majority of respondents believing the reduction in the toxicity of harmful chemicals was extreme importance (47.7 per cent) while 26.2 per cent stated that they also believed that this issue was very important to them.

Table 7.20: Potential benefits of sustainable practices for Tasmanian, Western Australian and New Zealand wineries

Sustainable practice	TAS						WA						NZ					
	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean
Builds consumer awareness of winery	0.0%	0.0%	40.0%	46.7%	13.3%	3.73	12.5%	21.9%	40.6%	9.4%	15.6%	2.94	29.2%	26.2%	13.8%	16.9%	13.8%	2.60
Eco label importance for company/ product branding	0.0%	0.0%	26.7%	13.3%	60.0%	4.33	9.4%	21.9%	28.1%	15.6%	25.0%	3.27	29.2%	24.6%	24.6%	7.7%	13.8%	2.52
Reduction or elimination of greenhouse gas emissions	0.0%	0.0%	20.0%	53.3%	26.7%	4.07	12.5%	21.9%	68.8%	93.8%	6.3%	3.03	20.0%	15.4%	21.5%	27.7%	15.4%	3.03
Wineries' supplier and distributor relationships	13.3%	20.0%	40.0%	20.0%	6.7%	2.87	9.4%	21.9%	9.4%	18.8%	40.6%	3.64	29.2%	21.5%	12.3%	18.5%	18.5%	2.75
Development of new business opportunities	9.4%	12.5%	25.0%	18.8%	34.4%	3.40	9.4%	12.5%	25.0%	18.8%	34.4%	3.58	24.6%	20.0%	15.4%	18.5%	21.5%	2.92

Table 7.20: Potential benefits of sustainable practices for Tasmanian, Western Australian and New Zealand wineries (continued)

Sustainable practice	TAS						WA						NZ					
	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean	Not important	Somewhat important	Important	Very Important	Extremely Important	Mean
Reduction of energy consumption	0.0%	0.0%	26.7%	33.3%	40.0%	4.13	15.6%	12.5%	28.1%	25.0%	18.8%	3.21	15.4%	16.9%	23.1%	21.5%	23.1%	3.20
Helps to reduce waste	0.0%	0.0%	13.3%	60.0%	26.7%	4.13	9.4%	21.9%	37.5%	18.8%	12.5%	3.03	15.4%	7.7%	16.9%	40.0%	20.0%	3.41
Helps to reduce toxicity of harmful chemicals	0.0%	0.0%	0.0%	53.3%	46.7%	4.47	9.4%	3.1%	31.3%	37.5%	18.8%	3.55	10.8%	4.6%	10.8%	26.2%	47.7%	3.95

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Table 7.21 shows how Tasmanian, Western Australian and New Zealand wineries define the potential benefits of sustainability based on their level of commitment towards this concept. Statistical analysis using an ANOVA was conducted and revealed that reducing the toxicity of harmful chemicals was the only significant factor ($F = 6.627$, $Sig. = .002$) at the .05 level of significance. For Western Australian wineries building consumer awareness ($F = 9.116$, $Sig. = .000$), reducing greenhouse gas emissions ($F = 12.899$, $Sig. = .000$), reducing energy consumption ($F = 10.464$, $Sig. = .000$) and reducing the toxicity of harmful chemicals ($F = 3.172$, $Sig. = .022$) were noted as being significant. Tasmanian wineries did not record any significant factors at the .05 level of significance.

Table 7.21: How Tasmanian, Western Australian and New Zealand wineries define the potential benefits of sustainability based on their level of commitment to sustainability

Sustainable practice	TAS F	TAS Sig	WA F	WA Sig	NZ F	NZ Sig.
Builds consumer awareness of winery	.315	.584	9.116	.000	.817	.446
Eco label importance for company/ product branding	.301	.593	2.071	.126	.124	.884
Reduction or elimination of greenhouse gas emissions	.867	.369	12.899	.000	.152	.859
Wineries' supplier and distributor relationships	.231	.638	1.019	.398	.053	.948
Development of new business opportunities	.644	.437	1.293	.296	.005	.995
Reduction of energy consumption	2.817	.117	10.464	.000	.066	.936
Helps to reduce waste	.744	.404	2.015	.134	.102	.903
Helps to reduce toxicity of harmful chemicals	2.773	.120	3.712	.022	6.627	.002

Significance level is measured at .05.

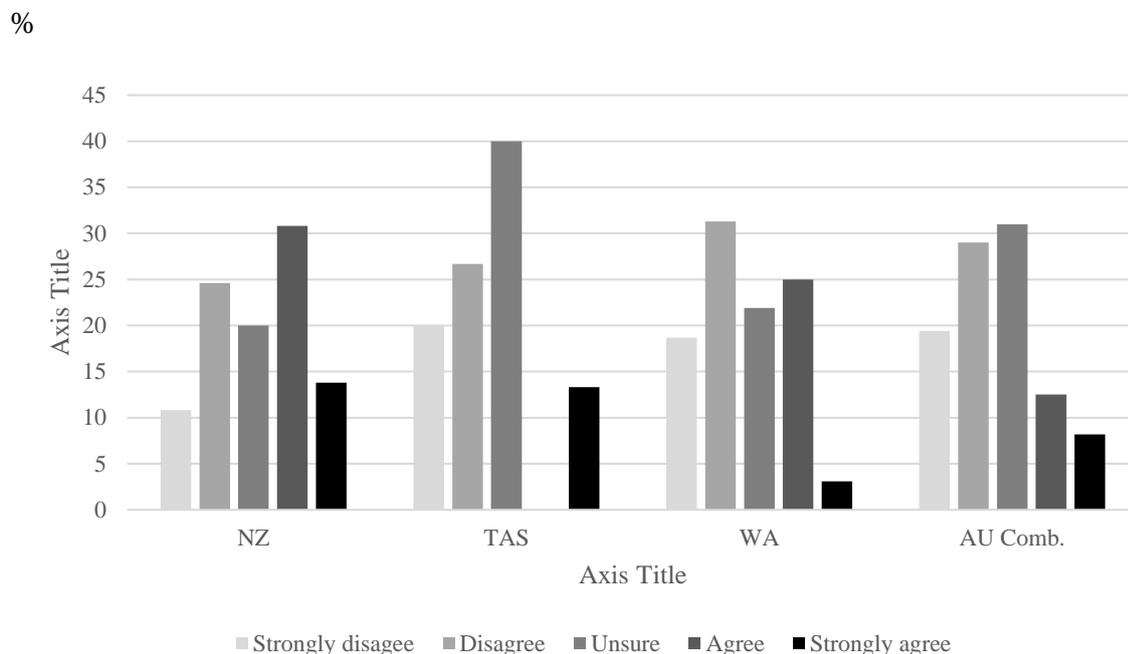
n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

The importance of sustainability for providing a source of competitive advantage for wineries

This question was asked using a 5 point Likert scale (1 = Strongly disagree, 5 = Strongly agree). Western Australian wineries (Figure 7.3) responded with 31.3 per cent of respondents disagreeing, 25 per cent agreeing and 21.9 per cent stating that they were unsure of whether sustainable practices help to improve competitive advantage for their winery. A further 18.7 per cent strongly disagreed with this statement, while only 3.1 per cent of respondents strongly agreed.

Tasmanian wineries displayed a degree of uncertainty in terms of whether they too had reaped the rewards of sustainable practices as a form of competitive advantage. 40 per cent of respondents stated that they were unsure; a further 26.7 per cent of wineries surveyed disagreed with the statement altogether. 20 percent strongly disagreed, while the remaining 13.3 per cent strongly agreed that they had gained some form of competitive advantage through employing sustainable practices. New Zealand wineries held a variety of opinions towards this issue as well; 13.8 per cent strongly agreed, while 30.8 per cent chose the 'Agree' category. However, 24.6 per cent of New Zealand wineries chose to disagree with this statement. This difference in opinion indicates that the benefits of sustainability in terms of providing a competitive point of difference for New Zealand wineries is still yet to be seen by many wine producers. This is a sentiment that was echoed by the responses from the Tasmanian and Western Australian wineries; it would appear that these winery owners are also still yet to see any real benefits from positioning themselves using sustainable practices as a tool to acquire competitive advantage.

Figure 7.3: The importance of sustainability for providing a source of competitive advantage for New Zealand, Tasmanian and Western Australian wineries

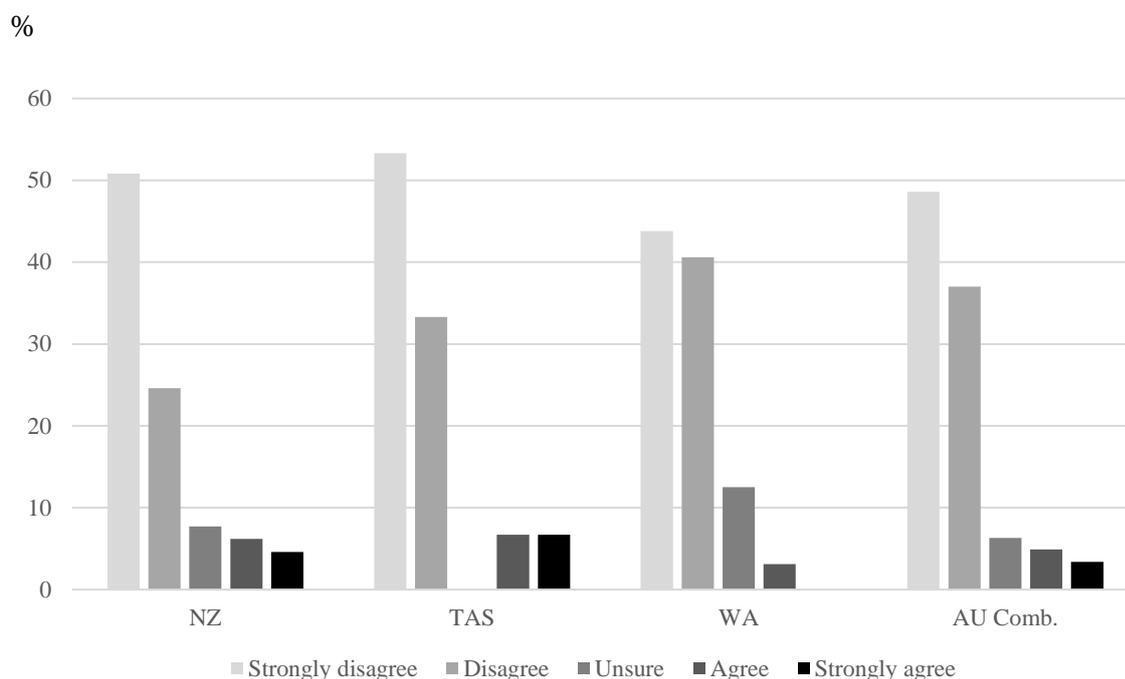


Note: 'AU Comb.' represents the combined totals for TAS and WA.

The importance of sustainable practices for the wine industry

This question was also asked using a 5 point Likert scale (1 = Strongly disagree, 5 = Strongly agree) and obtained an interesting array of responses across the three groups surveyed (Figure 7.4). 43.8 per cent of Western Australian survey participants strongly disagreed that sustainable practices were important for the Western Australian wine industry. A further 40.6 per cent of respondents disagreed, while 12.5 per cent of wineries surveyed were unsure. Tasmanian wineries also exhibited resistance to the idea that sustainable practices were important for the Tasmanian wine industry with 53.3 per cent of wineries strongly disagreeing with this question and 33.3 per cent opting to disagree. New Zealand wineries were also dismissive of the importance of sustainable practices, with 50.8 per cent strongly disagreeing that they were important.

Figure 7.4: The importance of sustainable practices for wineries



Note: 'AU Comb.' represents the combined totals for TAS and WA.

Reasons for adopting sustainable practices

In this section wineries were asked whether there were particular reasons why sustainable practices had or had not been chosen to be implemented at their winery. Eight areas of interest (refer to Table 7.22) were covered; the first four of these areas were based on increasing revenue, to reducing energy consumption, improving productivity and reducing costs. The next three areas covered were the reduction of environmental impacts, the ability to increase market share, and whether or not sustainable practices were used to attract visitors to wineries. The final aspect that was covered was whether establishing or exploiting new market opportunities was viewed as a key reason. Participants were also given the opportunity to list any other reasons for the adoption of sustainable winegrowing practices that they felt were important to them. Respondents were asked to tick 'Yes' if they had selected a particular area as one of the reasons for their vineyard sustainability practice, or 'No' if they had not.

The results shown in Table 7.22 also allowed for rankings to be made in terms of which reasons ranked the highest for each of the three groups who were surveyed. New Zealand wineries ranked increasing revenue in first place (89.2 per cent), other reasons (73.8 per cent) in second place, while reducing environmental impact featured in third place (69.2 per cent). Western Australian participants ranked reducing costs in first place (46.9 per cent), and improving productivity was ranked in second place (50.0 per cent). Reducing energy consumption (46.7 per cent) was ranked in third place. Tasmanian wineries ranked reducing environmental impact in first place (93.3 per cent), reducing costs in second place (60.0 per cent), and improving productivity in third place (40.0 per cent).

Other reasons that were cited by each group varied. New Zealand wineries were the most vocal with sharing the reasons why they had chosen to adopt sustainable winegrowing practices. These included that it was the ‘right thing to do’, because it was enforced by New Zealand Winegrowers, so that wineries could legally export, and to comply with SWNZ requirements. It was also mentioned that it was mandatory to become a member of SWNZ if wineries wanted to enter wine shows. Tasmanian wineries cited building soil fertility, minimising spray applications and that because protecting the environment is important as reasons. This did not mean that there were no issues for Tasmanian winegrowers, however. One respondent stated “Freight is a burden which impacts on sustainability. This is always an impact on small businesses, and sustainability going forward as it presents the business concerned with very high costs.” Another respondent pointed out that “Wine Tasmania has just released its programme, so it is early days yet.” The tone of Western Australian wineries in terms of their responses were the most relaxed across the three survey groups, with one respondent noting that “Sustainability is about working with the environment and will always produce a better product - and in the majority of cases will result in better profitability.” Another respondent stated that “To us sustainability is biodynamic and organic certification to protect the environment. It is

also about sustaining the flora and fauna of the vineyard and winery.” Further Western Australian responses cited harmony with the environment and corporate citizenship as other reasons.

Table 7.22: Reasons for the adoption of sustainable winegrowing practices at Tasmanian, Western Australian and New Zealand wineries

Reason	TAS		WA		NZ	
	Yes	Ranking (#)	Yes	Ranking (#)	Yes	Ranking (#)
To increase revenue	33.3 %	4 =	25.0 %	4 =	89.2 %	1
To reduce energy consumption	33.3 %	4 =	43.7 %	3	33.8 %	4
To reduce costs	60.0 %	2	53.1 %	1 =	29.2 %	5
To improve productivity	40.0 %	3	50.0 %	2	13.8 %	7 =
To reduce environmental impact	93.3 %	1	53.1 %	1 =	69.2 %	3
To increase market share	20.0 %	6	15.6 %	5	15.4 %	6 =
To attract visitors to my winery	26.7 %	5 =	25.0 %	4 =	15.4 %	6 =
To establish/exploit new market opportunities	26.7 %	5 =	12.5 %	6	13.8 %	7 =
Other	13.3 %	7	9.4 %	7	73.8 %	2

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Information sources for sustainable winegrowing practices

Emails provided the main information source for both Tasmanian and New Zealand winegrowers (Table 7.23) with figures recorded of 60 per cent and 64.6 per cent respectively. This was followed for both groups by newsletters (80 per cent for Tasmania and 58.5 per cent for New Zealand) and meetings (26.7 per cent for Tasmania and 53.8 per cent for New Zealand). Western Australian wineries cited newsletters as the primary way in which they received information regarding sustainable winegrowing practices (57.6 per cent) followed by emails (42.4 per cent) and meetings (21.2 per cent).

Other sources that were stated by Tasmanian wineries (20 per cent) were industry forums, talking to like-minded vignerons and farmers, winegrowing magazines and Entwine. Western Australian wineries who chose this option (15.2 per cent) cited certification organisations, mass media, television news and blog posts as being other sources where they received information. New Zealand wineries (44.6 per cent) cited Bragato conferences, websites and SWNZ's own research as other sources that they used.

Table 7.23: Information sources for sustainable winegrowing practices

	TAS	WA	NZ
Source	Yes	Yes	Yes
Newsletters	80.0%	57.6%	58.5 %
Meetings	26.7%	21.2%	53.8 %
Emails	60.0%	42.4%	64.6 %
Other sources	20.0%	15.2%	44.6 %

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Satisfaction with the level of information received regarding sustainable winegrowing practices

Both New Zealand (70.8 per cent) and Western Australian (75.8 per cent) wineries reported that they were satisfied with the level of information that they currently received regarding sustainable winegrowing practices. Of interest here is that 53.3 per cent of Tasmanian wineries reported that they were not satisfied, which shows that there needs to be addressed by Tasmanian wine industry bodies.

Promotion of sustainable winegrowing practices at Tasmanian, Western Australian and New Zealand wineries

When comparing who Tasmanian, Western Australian and New Zealand wineries feel should be primarily responsible for promoting regional sustainable winegrowing practices (Table 7.24) the public sector was ranked most important by Tasmanian (Mean = 2.40) and Western Australian wineries (Mean = 2.79). The majority of New Zealand wineries believed that the responsibility for this promotion lay outside of the realm of the public or private sector (Mean = 4.00). The New Zealand Government and the Wine Institute of New Zealand were both cited by New Zealand respondents as being examples of other organisations who they felt should hold the responsibility for the promotion of sustainable winegrowing practices.

The private sector was ranked second by Tasmanian (Mean = 2.07) and Western Australian wineries (Mean = 1.76). New Zealand wineries ranked and with the public sector in second place (Mean = 2.61), while the private sector was ranked third (Mean = 1.77). Utilising a

mixture of public and private sector relationships ranked in third position for Tasmanian (Mean = 1.53) and Western Australian wineries (Mean = 1.49).

Table 7.24 Responsibility for the promotion of sustainable winegrowing practices at Tasmanian, Western Australian and New Zealand wineries

Sector	TAS		WA		NZ	
	Mean	Ranking	Mean	Ranking	Mean	Ranking
Public sector	2.40	1	2.79	1	2.61	2
Private sector	2.07	2	1.76	2	1.77	3
Public/Private	1.53	3	1.45	3	1.62	4
Other	1.00	4	1.00	4	4.00	1

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

7.9 Biosecurity

Biosecurity measures at Tasmanian, Western Australian and New Zealand wineries

When asked whether Tasmanian, Western Australian and New Zealand wineries had biosecurity measures in place for wine tourists, Tasmanian wineries gave the highest affirmative percentage response (46.7 per cent) out of the three survey groups. Western Australia recorded the lowest figure (27.3 per cent) and New Zealand 30.8 per cent.

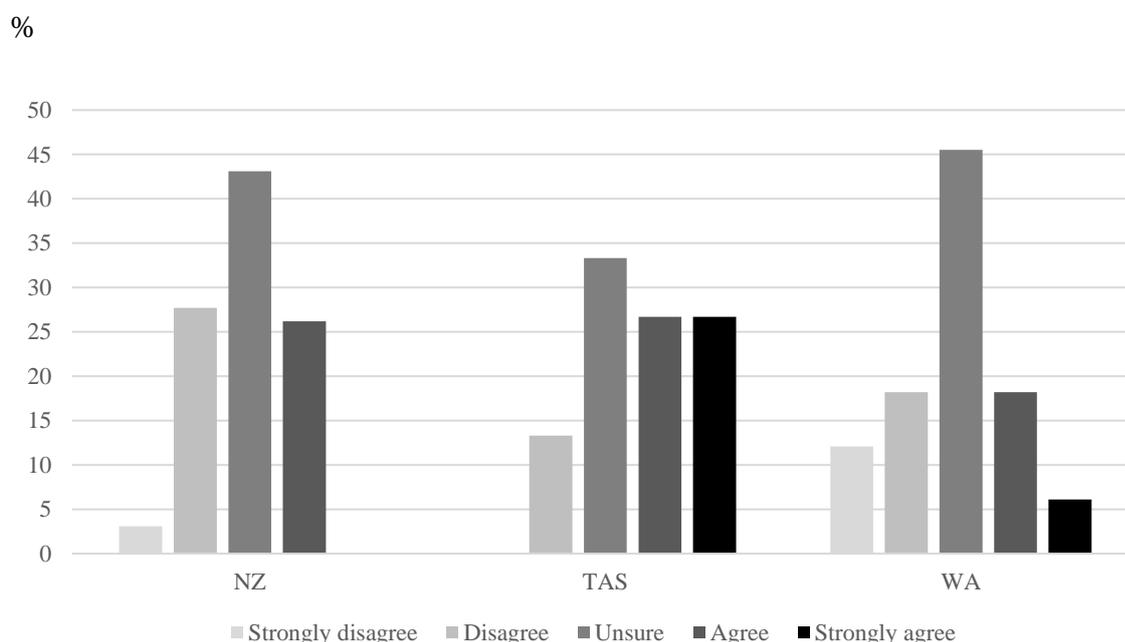
Visitor access at wineries

When asked whether winery visitors are able to walk freely amongst the vines onsite New Zealand reported the highest affirmative percentage (44.6 per cent), while Tasmania and Western Australia were equal in this regard at 33.3 per cent.

Strategies and information to deal with biosecurity threats at wineries

Figure 7.5 indicates a distinct level of uncertainty amongst Australian wineries as to whether they had strategies and information to deal with biosecurity threats. 45.5 per cent of Western Australian wineries indicated that they were unsure of whether the current level of information available regarding biosecurity threats that they received was adequate, while this category also recorded the highest response amongst Tasmanian participants as well (33.3 per cent). This trend also mirrors the general feeling amongst New Zealand wineries where the majority of responses (43.1 per cent) indicated that they were unsure if they were prepared to deal with biosecurity threats.

Figure 7.5. Tasmanian, Western Australian and New Zealand wineries and whether they adequate biosecurity information from government agencies



Sources of information regarding biosecurity threats at wineries

The leading source for information regarding biosecurity threats (Table 7.25) for Tasmanian wineries was Wine Tasmania (73.3 per cent) followed by the Department of Primary Industries,

Parks, Water and the Environment (60 per cent). Word of mouth ranked third at 46.7 per cent. Western Australian wineries listed the Department of Agriculture as their main source of information regarding biosecurity threats (75.8 per cent). Wines of Western Australia ranked second (60.6 per cent), while the Winemakers' Federation of Australia was third at 33.3 per cent. Other sources used by Tasmanian wineries were ABC's *Country Hour* radio programme, while Western Australian wineries cited MRIWA (Margaret River Wine Industry Association) as a source that they also used.

The New Zealand results (refer to Chapter 6 of this thesis) showed that New Zealand Winegrowers were cited as the most reliable source of information regarding biosecurity threats (76.9 per cent), while the Ministry of Primary Industries were ranked second (43.1 per cent) and newspapers ranked third at 21.5 per cent.

Table 7.25: Information sources regarding biosecurity threats in Tasmanian and Western Australian wineries

Source	% TAS	% WA
Department of Primary Industries, Parks, Water and the Environment	60%	24.2%
Department of Agriculture	13.3%	75.8%
Wine Tasmania	73.3%	-
Wines of Western Australia	-	60.6%
Winemakers' Federation of Australia	13.3%	33.3%
Australian Wine and Grape Authority	20.0%	15.2%
Wine Grape Growers Australia	6.7%	18.2
Wine Australia	0.0%	15.2%
Tasmanian Institute of Agriculture	20.0%	-
Local or regional councils	6.7%	21.2%
Universities or TAFE Colleges	6.7%	21.2%
Other competing businesses within the wine industry	13.3%	24.2%
Websites	6.7%	0.0%
Television	33.3%	3.0%
Newspapers	26.7%	24.2%
Word of mouth	46.7%	15.2%
Other	13.3%	6.1%
Total number of respondents		

Note: Respondents can provide multiple answers.
n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Biosecurity and the local sustainable winegrowing schemes

When asked whether biosecurity should be part of their local sustainable winegrowing scheme all Tasmanian respondents that it should (100 per cent). 84.8 per cent of Western Australian wineries also responded positively to this same statement. When compared to the New Zealand survey results the figure of 55.4 per cent is the lowest percentage amount across all three survey groups.

7.10 Innovation in Tasmanian, Western Australian and New Zealand wineries

The following section illustrates the levels of innovation within the Tasmanian and Western Australian wine industries in 2016 and compares these findings to the New Zealand survey results (refer to Chapter 6).

Introduction of innovations in the wine industry

Figure 7.6 shows that New Zealand had the highest percentage when considering the introduction of new or improved goods and services (46.2 per cent) and new or significantly improved organisational processes (43.1 per cent). Tasmania reported the highest level of implementation in terms of sales and marketing methods (53.3 per cent) and new or significantly improved operational processes (46.7 per cent). Western Australian wineries appeared to be the most risk averse when considering innovation; their percentages reported were the lowest out all three groups in all but one of the categories presented. This category (new or improved goods and services) was reported at 36.4 per cent for Western Australia, which put them ahead of their Tasmanian counterparts (26.7 per cent) but still behind New Zealand (46.2 per cent).

Figure 7.6 Introduction of innovation over the two financial years prior to 2015/2016 for Tasmanian, Western Australian and New Zealand wineries

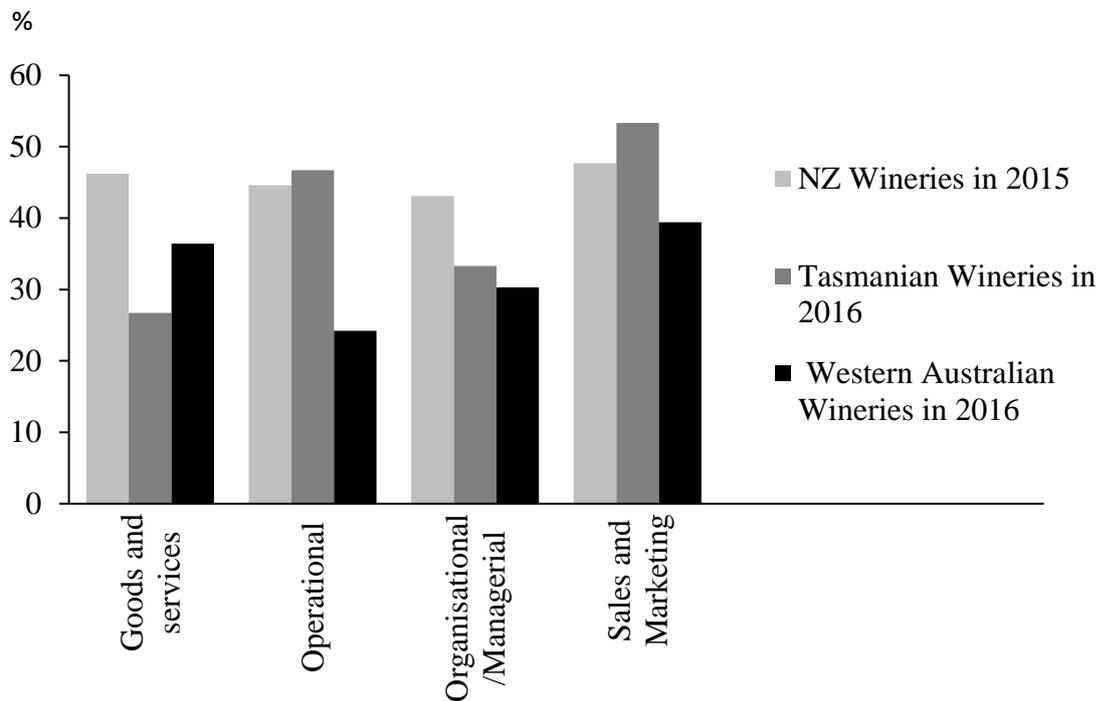


Table 7.26 shows that based Tasmanian, Western Australian and New Zealand winery size that none of the four categories were significant at the .05 level for Tasmanian wineries. The introduction of new or significantly improved operational processes where significant for both Western Australian ($F = 3.235$, $Sig. = .024$) and New Zealand wineries ($F = 2.221$, $Sig. = .020$). The other significant factor based on the size of the winery for Western Australian participants was the implementation of new or significantly improved organisational or managerial processes ($F = 3.514$, $Sig. = .018$). All other factors remained insignificant at the .05 level for Western Australian and New Zealand wineries.

Table 7.26: Introduction of innovation over the two financial years prior to 2015/2016 based on winery size

Statement	F test statistic (TAS)	Sig. (TAS)	F test statistic (WA)	F test statistic (WA)	F test statistic (NZ)	Sig. (NZ)
Did your winery introduce any new or improved goods or services over the last 2 financial years?	-	-	2.111	.101	1.136	.377
Did your winery introduce on to the market any new or significantly improved operational processes over the last 2 financial years?	-	-	3.235	.024	2.221	.020
Did your winery implement any new or significantly improved organisational or managerial processes over the last 2 financial years?	.497	.820	3.514	.018	1.039	.470
Did your winery implement any new or significantly improved sales or marketing methods over the last 2 financial years?	-	-	1.476	.256	.936	.583

Significance is measured at the .05 level.
n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Sales for wineries resulting from significantly improved goods or services

Table 7.27 illustrates that sales that came as a result of new or significantly improved goods or services were reported by 66.7 per cent of Tasmanian respondents and 63.7 per cent of Western Australian respondents as having had no effect on sales at all. Both these figures are considerably higher than those reported by New Zealand wineries of 47.7 per cent. However,

it is interesting to note that 32.3 per cent of New Zealand wineries believed that innovations introduced had actually been responsible for ten per cent or less of their overall sales. Western Australian wineries reported 15.2 per cent for the same category, while Tasmanian wineries recorded only 6.7 per cent.

When these figures are compared to the national and agricultural innovation averages from Australia and New Zealand in Table 7.27 the lack of innovative behaviour with regards to new or significantly improved goods or services amongst wineries becomes apparent. The only time that Australian figures exceed these averages is for the category 40 per cent or less of sales where Tasmania records 13.3 per cent compared to the Australian national average of 5 per cent (Australian Bureau of Statistics [ABS], 2018). 66.7 per cent of Tasmanian wineries and 63.6 per cent of Western Australian wineries declared that sales that came as a result of new or significantly improved goods or services were reported had no effect on sales whatsoever in 2016. New Zealand wineries reported that 47.7 per cent for this same category. 32.3 per cent of New Zealand wineries stated that innovations introduced had actually been responsible for ten per cent or less of their overall sales, although this is still lower than the New Zealand national and agricultural averages for this category of 57 per cent and 46 per cent (Statistics New Zealand, 2013).

Table 7.27: Comparison of the percentage of sales from significantly improved goods or services for Tasmanian, Western Australian and New Zealand wineries with national and agricultural innovation averages

Category	(%) TAS	(%) WA	(%) AU combined	AU National Average 2016	AU Agricultural Average 2016	(%) NZ	NZ National Average 2013	NZ Agricultural Average 2013
Zero	66.7%	63.6%	64.6%	2.0%	15.0%	47.7%	3.0%	6.0%
10% or less	6.7%	15.2%	12.5%	43.0%	48.0%	32.3%	57.0%	46.0%
20% or less	13.3%	9.1%	10.4%	23.0%	15.0%	4.6%	26.0%	33.0%
30% or less	-	3.0%	2.0%	10.0%	11.0%	6.2%	8.0%	11.0%
40% or less	13.3%	3.0%	6.0%	5.0%	0	0	0	0
41% - 100%	-	3.0%	2.0%	7.0%	0	0	0	0
Don't know	-	6.1%	4.0%	9.0%	8.0%	9.2%	6.0%	2.0%

Sources for the Australian and New Zealand national and agricultural averages: Australian Bureau of Statistics [ABS] (2018); Statistics New Zealand (2013).

n = 15 (Tasmania), n = 33 (Western Australia), n = 48 (AU Combined), n = 65 (New Zealand).

Significantly improved goods or services based on size of Tasmanian, Western Australian and New Zealand wineries

Significantly improved goods and services that were implemented based on the size of the Tasmanian, Western Australian and New Zealand wineries are shown in Table 7.28. The method found to be significant at the .05 level for Western Australian wineries were those that were obtained from others with significant improvements made the winery themselves ($F =$

3.159, Sig. = .027). The same method was also found to be significant for New Zealand wineries (F = 3.905, Sig. = .000). No methods used were found to be significant for Tasmanian wineries.

Table 7.28: Significantly improved goods or services based on size of wineries

Method used to make improvement	F test statistic (TAS)	Sig. (TAS)	F test statistic (WA)	Sig. (WA)	F test statistic (NZ)	Sig. (NZ)
Developed by this business	.436	.846	2.608	.052	1.027	.484
Developed by this business in partnership with others	-	-	-	-	-	-
Obtained from others and significant improvements made by your business	-	-	3.159	.027	3.905	.000
Obtained from others and NO significant improvements made by your business	-	-	.952	.558	-	-

Significance is measured at the .05 level.
n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Improvements made to goods or services at wineries

New Zealand reported the highest figure of 36.9 per cent of wineries indicated that they had developed new or significantly improved goods or services by themselves as indicated by Table 7.29. Tasmanian wineries ranked second with their use of this method (33 per cent). A further 13.3 per cent of Tasmanian wineries also indicated that they had obtained improved goods or services from others and then made significant improvements themselves to these, while Western Australian wineries reported 12.1 per cent for this same category. Only 24.2 per cent of Western Australian wineries stated that they had developed new or significantly improved goods or services by themselves which is the lowest figure of the three groups in this regard.

The results in Table 7.29 also show that for this area the figures for both Tasmanian and Western Australian wineries fall below the Australian national and agricultural innovation averages, while New Zealand wineries are above their agricultural average reported in 2015 significantly improved goods or services across all categories (Statistics New Zealand, 2013). New Zealand wineries are, however, below the national average reported in 2015 apart from where they have obtained ideas from others and made significant improvements to them which was equal to the national average of two per cent.

Table 7.29: Significantly improved goods or services at wineries compared to Australian and New Zealand national and agricultural innovation averages

Method used to make improvement	Yes (TAS)	Yes (WA)	Yes (AU combined)	AU Agricultural Average 2016	AU National Average 2016	Yes (NZ 2015)	NZ Agricultural Average 2013	NZ National Average 2013
Developed by this business	33.3%	24.2%	27.0%	66.3%	65.9%	36.9%	2.0%	10.0%
Developed by this business in partnership with others	6.7%	0.0%	2.0%	11.2%	19.3%	1.5%	1.0%	4.0%
Obtained from others and significant improvements made by your business	13.3%	12.1%	12.5%	22.5%	19.2%	6.2%	2.0%	2.0%
Obtained from others and NO significant improvements made by your business	0.0%	6.1%	4.2%	-	-	4.6%	2.0%	3.0%

Sources for the Australian and New Zealand national and agricultural averages: Australian Bureau of Statistics [ABS] (2018); Statistics New Zealand (2013).

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Improvements made to operational processes at wineries

Table 7.30 illustrates that Tasmanian wineries were the most proactive over the four methods of improvement listed. The highest percentages were recorded by Tasmanian wineries who developed their own improved operational processes or partnered with others for this purpose (both categories reporting 26.7 per cent each). The highest percentage recorded by New Zealand wineries were where the winery concerned had developed their own improved operational processes (20 per cent). The most active area of significant improvement of operational processes at Western Australian wineries was where operational process improvements had been obtained from other wineries with no further adjustments being made to these (12.1 per cent).

Table 7.30: Significantly improved operational processes at Tasmanian, Western Australian and New Zealand wineries

Method used to make improvement	Yes (TAS)	Yes (WA)	Yes (AU comb.)	Yes (NZ)
Developed by this business	26.7%	6.1%	12.5%	20.0%
Developed by this business in partnership with others	26.7%	6.1%	12.5%	10.8%
Obtained from others and significant improvements made by your business	13.3%	6.1%	8.3%	9.2%
Obtained from others and no significant improvements made by your business	6.7%	12.1%	10.4%	4.6%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Table 7.31 compares significantly improved operational processes to Australian and New Zealand national and agricultural innovation averages. The results of this comparison show that for Tasmanian wineries 26.7 per cent stated that they had developed their own significantly

improved operational processes. This was higher than the Australian national innovation average reported of 16.7 per cent but still well below the Australian agricultural innovation average of 64.7 per cent (ABS, 2018). Developing significantly improved operational processes with others was another category where Tasmanian respondents performed better than the Australian averages reported for 2016. The figure reported for this category of 26.7 per cent is higher than both the Australian agricultural and national innovation averages of 25.3 per cent and 20.1 per cent respectively (ABS, 2018). The figures reported by Western Australian wineries fell below the Australian agricultural and national innovation averages for all categories where data was available.

New Zealand wineries stated that significantly improved organisational and managerial processes were developed by 29.2 per cent of those surveyed, and 6.2 per cent stated that they developed these processes in partnership with other businesses. These 2015 New Zealand results in both these categories were higher than those reported as the 2013 New Zealand innovation averages in these areas, which were 13 per cent and 6 per cent respectively (Statistics New Zealand, 2013).

Table 7.31: Significantly improved operational processes at wineries compared to Australian and New Zealand national innovation averages

Method used to make improvement	TAS	WA	AU comb.	AU Agricultural Average 2016	AU National Average 2016	NZ	NZ Agricultural Average 2013	NZ National Average 2013
Developed by this business	26.7%	6.1%	12.5%	64.7%	16.7%	20.0%	4.0%	10.0%
Developed by this business in partnership with others	26.7%	6.1%	12.5%	25.3%	20.1%	10.8%	1.0%	4.0%
Obtained from others and significant improvements made by your business	13.3%	6.1%	8.3%	15.3%	15.3%	9.2%	5.0%	4.0%
Obtained from others and NO significant improvements made by your business	6.7%	12.1%	10.4%	-	-	4.6%	2.0%	2.0%

Sources for the Australian and New Zealand national and agricultural averages: Australian Bureau of Statistics [ABS] (2018); Statistics New Zealand (2013).

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

When considering significantly improved operational processes based on size of Tasmanian, Western Australian and New Zealand wineries the only categories that were significant were reported by Western Australian wineries (see Table 7.32). These were improvements developed by the business in partnership with others ($F = 3.328$, $\text{Sig.} = .022$) and those obtained from others with no significant improvements made ($F = 3.159$, $\text{Sig.} = .027$). Both New Zealand

and Tasmanian wineries reported no significant factors based on winery size within the context of improved operational processes.

Table 7.32: Significantly improved operational processes based on size of wineries

Method used to make improvement	F test statistic (TAS)	Sig. (TAS)	F test statistic (WA)	Sig. (WA)	F test statistic (NZ)	Sig. (NZ)
Developed by this business	-	-	-	-	.993	.520
Developed by this business in partnership with others	-	-	3.328	.022	1.130	.382
Obtained from others and significant improvements made by your business	-	-	-	-	1.578	.119
Obtained from others and NO significant improvements made by your business	-	-	3.159	.027	-	-

Significance is measured at the .05 level.
n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Improvements made to organisational and managerial processes at wineries

Table 7.33 shows that New Zealand wineries had the highest percentage of significantly improved organisational and managerial processes that were developed by individual wineries (29.2 per cent). Tasmanian respondents reported the highest occurrence of where organisational and managerial processes had been developed in partnership with others (26.7 per cent). This was over four times the amount indicated by both New Zealand and Western Australian wineries. 15.2 per cent of Western Australian wineries stated that they had obtained improved organisational and managerial processes from other wineries and made improvements to these. This was the highest percentage reported in this category over the three groups, with Tasmania ranking second (13.3 per cent) and New Zealand in third place at 7.7 per cent.

When these results are compared with the Australian and New Zealand national and agricultural innovation averages (also shown in Table 7.33) the results of this comparison show that for Tasmanian wineries (26.7 per cent) were above the Australian national average of 19.1 per cent (ABS, 2018) for methods which were developed in partnership with others. At 13.3 per cent these wineries were also above the Australian national average of 11.5 per cent (ABS, 2018) for obtaining improved organisational and managerial processes from others and made significant improvements themselves. The figures reported by Western Australian wineries fell below the Australian agricultural and national innovation averages for all categories where data was available. New Zealand wineries reported figures higher than the 2015 New Zealand national and agricultural innovation averages for the categories of obtaining improved organisational and managerial processes that were developed by the winery concerned (29.2 per cent). Figures higher than both the New Zealand national and agricultural innovation averages were also reported for the category where other businesses had provided the organisational and managerial method concerned, but significant improvements had been made by the winery themselves (7.7 per cent). The 2013 New Zealand innovation average in this latter category was only 3 per cent (Statistics New Zealand, 2013).

Table 7.33: Significantly improved organisational and managerial processes at wineries compared to Australian and New Zealand national and innovation averages

Method used to make improvement	Yes (TAS)	Yes (WA)	Yes (AU combined)	AU Agricultural Average 2016	AU National Average 2016	Yes (NZ 2015)	NZ Agricultural Average 2013	NZ National Average 2013
Developed by this business	26.7%	6.1%	12.5%	57.4%	73.7%	29.2%	7.0%	13.0%
Developed by this business in partnership with others	26.7%	6.1%	12.5%	30.9%	19.1%	6.2%	2.0%	6.0%
Obtained from others and significant improvements made by your business	13.3%	6.1%	8.3%	15.3%	11.5%	7.7%	2.0%	3.0%
Obtained from others and NO significant improvements made by your business	6.7%	12.1%	10.4%	-	-	7.7%	2.0%	1.0%

Sources for the Australian and New Zealand national and agricultural averages: Australian Bureau of Statistics [ABS] (2018); Statistics New Zealand (2013).
n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

When improved organisational and managerial processes are considered based on the size of wineries (Table 7.34) no categories were found to be significant at the .05 level for both Tasmanian and New Zealand wineries. Western Australian wineries reported that wineries developing their own organisational and managerial process ($F = 3.235$, $Sig. = .024$) and

developing these process in partnership with others ($F = 3.328$, $\text{Sig.} = .022$) were both found to be significant factors.

Table 7.34: Significantly improved organisational and managerial processes based on size of wineries

Method used to make improvement	F test statistic (TAS)	Sig. (TAS)	F test statistic (WA)	Sig. (WA)	F test statistic (NZ)	Sig. (NZ)
Developed by this business	.436	.846	3.235	.024	1.227	.302
Developed by this business in partnership with others	.292	.913	3.328	.022	1.331	.231
Obtained from others and significant improvements made by your business	-	-	2.439	.065	.631	.903
Obtained from others and NO significant improvements made by your business	-	-	2.333	.074	.951	.567

Significance is measured at the .05 level.
 $n = 15$ (Tasmania), $n = 33$ (Western Australia), $n = 65$ (New Zealand).

Improvements made to sales and marketing at wineries

Tasmanian wineries reported the highest percentage in terms of where improved sales and marketing methods had been developed by the winery concerned (46.7 per cent). These wineries also indicated in Table 7.35 that obtaining improved sales and marketing methods from other wineries and then adapting these was also an important area (26.7 per cent). Western Australian respondents indicated that improved sales and marketing methods were most likely to have been established in-house (24.2 per cent), while New Zealand wineries reported their 30.8 per cent for this same category.

Australian and New Zealand national and agricultural innovation averages are also compared to the sources of significantly improved sales and marketing processes in Table 7.35. Once

again Tasmanian wineries at 26.7 per cent are shown to be above the Australian national average of 19.1 per cent (ABS, 2018) for the category of where wineries developed significantly improved sales and marketing processes in partnership with others. All figures reported by Western Australian wineries fell below the Australian agricultural and national innovation averages for all categories where data was available. 9.2 per cent of New Zealand wineries stated that significantly improved sales and marketing processes methods were developed in partnership with other businesses, which is slightly higher than the 2013 New Zealand innovation average of 9 per cent (Statistics New Zealand, 2013). 6.2 per cent stated that they had obtained improved sales and marketing methods from other businesses, which is higher than the 2013 New Zealand innovation average of 3 per cent for this category (Statistics New Zealand, 2013).

Table 7.35: Significantly improved sales and marketing processes at wineries compared to Australian and New Zealand national innovation averages

Method used to make improvement	Yes (TAS)	Yes (WA)	Yes (AU combined)	AU Agricultural Average 2016	AU National Average 2016	Yes (NZ 2015)	NZ Agricultural Average 2013	NZ National Average 2013
Developed by this business	26.7%	6.1%	12.5%	60.8%	73.7%	30.8%	5.0%	13.0%
Developed by this business in partnership with others	26.7%	6.1%	12.5%	29.9%	19.1%	9.2%	1.0%	9.0%
Obtained from others and significant improvements made by your business	13.3%	6.1%	8.3%	14.4%	11.5%	6.2%	1.0%	3.0%
Obtained from others and NO significant improvements made by your business	6.7%	12.1%	10.4%	-	-	7.7%	1.0%	2.0%

Sources for the Australian and New Zealand national and agricultural averages: Australian Bureau of Statistics [ABS] (2018); Statistics New Zealand (2013).

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Table 7.36 illustrates that Western Australian wineries had the only significant category at the .05 level of significance where business had partnered with others to improve sales and marketing methods ($F = 4.725$, $\text{Sig.} = .005$). All other categories were insignificant across all three groups.

Table 7.36: Significantly improved sales and marketing processes based on size of wineries

Method used to make improvement	F test statistic (TAS)	Sig. (TAS)	F test statistic (WA)	Sig. (WA)	F test statistic (NZ)	Sig. (NZ)
Developed by this business	.497	.820	1.087	.460	.982	.531
Developed by this business in partnership with others	-	-	4.725	.005	.520	.967
Obtained from others and significant improvements made by your business	.374	.874	.958	.554	.332	.999
Obtained from others and NO significant improvements made by your business	-	-	-	-	1.774	.069

Significance is measured at the .05 level.
n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Reasons for innovation at Tasmanian, Western Australian and New Zealand wineries

A number of reasons were given for innovation at Tasmanian and Western Australian wineries (Table 7.37), with improving and increasing productivity being given as the primary reasons by Tasmanian wineries (both first equal at 80 per cent). Reducing costs, increasing responsiveness to others and establishing new market opportunities were second equal at 66.7 per cent for Tasmanian wineries.

In a reversal of this pattern Western Australian wineries reported that reducing costs and increasing responsiveness to others were the most important reasons at 60.6 per cent and 63.6 per cent respectively, while improving productivity was ranked second (45.5 per cent) and

increasing productivity and reducing environmental impact were in third place (42.4 per cent). Establishing new market opportunities ranked much lower as a reason than their Tasmanian counterparts and was at 36.4 per cent. The only Australian national and agricultural averages available from the ABS (2018) data were in the categories of increasing customer responsiveness (National average = 35.5 per cent, Agricultural average = 11.6 per cent), increasing market share (National average = 20.8 per cent, Agricultural average = 18.7 per cent) and establishing new market opportunities responsiveness (National average = 24.6 per cent, Agricultural average = 19.7 per cent). In each of these categories all Tasmanian and Western Australian wineries reported figures that were above these national and agricultural averages.

New Zealand wineries gave improving productivity as their primary reason for innovation (69.2 per cent). This was still below the 2013 New Zealand innovation average of 83 per cent (Statistics New Zealand, 2013) and the 2013 New Zealand agricultural sector innovation average of 77 per cent (Statistics New Zealand, 2013). The need to reduce costs ranked second (64.6 per cent), followed by increasing responsiveness to customers and establishing or exploiting new market opportunities which were third equal at 63.1 per cent. Other notable mentions were to increase market share (61.5 per cent) and to reduce environmental impact (52.3 per cent).

Table 7.38 details the reasons for innovation based on winery size for Tasmanian, Western Australian and New Zealand wineries. No reasons are found to be significant for Tasmanian or New Zealand wineries at the .05 level of significance. However, for Western Australian wineries improving productivity ($F = 3.762$, $sig. = .014$) was a significant reason for the occurrence of innovation based on the size of the winery concerned.

Table 7.37: Reasons for innovation occurring in Tasmanian, Western Australian and New Zealand wineries

Reason	Yes (TAS)	Yes (WA)	Yes (NZ)
To improve productivity	80.0%	45.5%	69.2%
To increase productivity	80.0%	42.4%	50.8%
To reduce costs	66.7%	60.6%	64.6%
To increase responsiveness to customers	66.7%	63.6%	63.1%
To increase market share	53.3%	39.4%	61.5%
To establish/ or exploit new market opportunities	66.7%	36.4%	63.1%
To improve work safety standards	60.0%	30.3%	44.6%
To reduce energy consumption	66.7%	36.4%	40.0%
To reduce environmental impact	93.3%	42.4%	52.3%
To replace goods and services being phased out	13.3%	9.1%	18.5%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Table 7.38: Reasons for innovation occurring in Tasmanian, Western Australian and New Zealand wineries based on winery size

Reason	F (TAS)	Sig. (TAS)	F (WA)	Sig. (WA)	F (NZ)	Sig. (NZ)
To improve productivity	-	-	3.762	.014	.744	.800
To increase productivity	-	-	1.864	.143	.947	.571
To reduce costs	-	-	1.184	.398	.655	.884
To increase responsiveness to customers	-	-	.739	.735	.870	.660
To increase market share	-	-	1.369	.301	.712	.833
To establish/ or exploit new market opportunities	.785	.721	1.106	.448	.959	.557
To improve work safety standards	-	-	1.812	.155	.701	.843
To reduce energy consumption	-	-	1.310	.330	1.160	.356
To reduce environmental impact	-	-	1.679	.188	.984	.530
To replace goods and services being phased out	.682	.752	1.038	.494	1.088	.422

Significance is measured at the .05 level.

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Sources for ideas and information for innovation at wineries

When asked who or what were the main sources for ideas and information regarding innovation (Table 7.39) Tasmanian wineries cited books, journals patent disclosures or the Internet as the leading source (86.7 per cent), followed by competitors and other businesses from the wine industry (73.3 per cent), and existing staff (66.7 per cent). Government Research Institutes and Universities or polytechnics rated as the lowest sources of information (6.7 per cent). Western Australian wineries regarded existing staff as the most valuable source for ideas and information (45.5 per cent), followed by competitors and other businesses from the wine industry (42.4 per cent). Universities or polytechnics rated as the least used source of information at 9.1 per cent.

Leading sources of ideas and information for innovation at New Zealand wineries were existing staff (62.4 per cent), new staff (46.2 per cent) and competitors and other businesses within the wine industry (44.6 per cent). From the data that was available for the Australian national and agricultural averages it was found that customers (National average = 21.5 per cent, Agricultural average = 38.6 per cent), suppliers (National average = 25.2 per cent, Agricultural average = 21.8 per cent) along with competitors and other businesses within the wine industry (National average = 24 per cent, Agricultural average = 27.9 per cent) were all categories where wineries were above both the national and agricultural averages. The category of industry or employer organisations was found to be where the combined Australian wineries total of 33.3 per cent was below the national average of 36.6 per cent but above the agricultural average of 15.5 per cent.

Sources for ideas and information for innovation at wineries based on winery size

Table 7.40 shows that no sources for ideas and information for innovation were significant at the .05 level for Tasmanian or New Zealand wineries. Western Australian wineries however

reported that competitors and other businesses within the wine industry ($F = 3.912$, $\text{sig.} = .012$) and the use of books, journals patent disclosures or the Internet ($F = 3.014$, $\text{sig.} = .031$) were significant at the .05 level. Government Research Institutes, other research institutes or research associations were also found to be significant ($F = 5.254$, $\text{sig.} = .003$) as well.

Table 7.39: Sources of ideas and information for innovation at Tasmanian, Western Australian and New Zealand wineries

Source	Yes (TAS)	Yes (WA)	Yes (AU Comb.)	AU National Average (2016)	AU Agricultural Average (2016)	Yes (NZ)	NZ National Average (2013)	NZ Agricultural Average (2013)
New staff (appointed in the last 2 years)	40.0%	30.3%	40.0%	-	-	46.2%	52.0%	48.0%
Existing staff	66.7%	45.5%	66.7%	-	-	64.6%	73.0%	71.0%
Other businesses within the business group	20.0%	15.2%	20.0%	49.5%	61.1%	21.5%	47.0%	-
Customers	53.3%	39.4%	53.3%	21.5%	38.6%	46.2%	61.0%	26.0%
Suppliers	53.3%	30.3%	53.3%	25.2%	21.8%	40.0%	50.0%	40.0%
Competitors and other businesses from the same industry	73.3%	42.4%	73.3%	24.0%	27.9%	44.6%	N/A	-
Businesses from other industries (not including customers or suppliers)	20.0%	27.3%	20.0%	-	-	26.2%	N/A	-
Consultants, banks or accountants	26.7%	24.2%	26.7%	-	-	33.8%	49.0%	58.0%
Books, journals, patents or the Internet	80.0%	39.4%	80.0%	-	-	38.5%	46.0%	47.0%
Wine shows, festivals or conferences	60.0%	33.3%	60.0%	-	-	30.8%	43.0%	47.0%
Industry or employer organisations	33.3%	15.2%	33.3%	36.6%	15.5%	30.8%	31.0%	38.0%
Universities or polytechnics	6.7%	9.1%	6.7%	4.8%	3.0%	6.2%	10.0%	11.0%
Government Research Institutes, other research institutes or research associations			6.7%	3.0%	1.0%	12.3%	12.3%	15.0%
Government agencies			20.0%	-	2.7%	7.7%	7.7%	5.0%

n = 15 (Tasmania), n = 33 (Western Australia), n = 48 (AU Combined), n = 65 (New Zealand). Sources for the Australian and New Zealand national and agricultural averages: Australian Bureau of Statistics [ABS] (2018); Statistics New Zealand (2013).

Table 7.40: Sources of ideas and information for innovation at Tasmanian, Western Australian and New Zealand wineries based on winery size

Source	F (TAS)	Sig. (TAS)	F (WA)	Sig. (WA)	F (NZ)	Sig. (NZ)
New staff (appointed in the last 2 years)	.744	.733	1.562	.225	.986	.528
Existing staff	-	-	1.250	.361	1.154	.361
Other businesses within the business group (e.g. subsidiaries or parent companies)	-	-	.746	.729	1.093	.417
Customers	.497	.820	.891	.607	.768	.774
Suppliers	-	-	2.460	.063	.966	.550
Competitors and other businesses from the same industry	-	-	3.912	.012	1.446	.170
Businesses from other industries (not including customers or suppliers)	-	-	.683	.783	1.683	.089
Professional advisors, consultants, banks or accountants	-	-	1.290	.339	.683	.860
Books, journals, patent disclosures or the Internet	-	-	3.014	.031	.513	.970
Wine shows, festivals or conferences	.477	.829	2.037	.112	1.135	.378

Table 7.41: Sources of ideas and information for innovation at Tasmanian, Western Australian and New Zealand wineries based on winery size

(continued)

Source	F (TAS)	Sig. (TAS)	F (WA)	Sig. (WA)	F (NZ)	Sig. (NZ)
Industry or employer organisations	.682	.752	1.127	.434	.604	.923
Universities, TAFE Colleges or polytechnics	.231	.942	1.102	.450	.740	.805
Crown/Government Research Institutes, other research institutes or research associations	-	-	5.254	.003	.670	.871
Government agencies	-	-	2.439	.065	.477	.981

Significance is measured at the .05 level.

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Activities to support innovation at Tasmanian, Western Australian and New Zealand wineries

Table 7.41 details the activities that were undertaken to support innovation at Tasmanian and Western Australian wineries. The main activities listed by Tasmanian wineries that were done in support of innovation were the implementation of organisational restructuring and acquiring new machinery and equipment (both 60 per cent). Design related activities and employee training were both undertaken by 53.3 per cent of respondents. Western Australian wineries listed marketing the introduction of new goods and services as the activity most likely to be performed in to support innovation (27.3 per cent). The use of new viticultural techniques and design were both undertaken by 24.2 per cent of respondents. No data for the Australian national or agricultural averages was available.

When compared with activities that New Zealand wineries performed to support innovation the main activities listed were design at 36.9 per cent, followed by the acquisition of new computer hardware or software (32.3 per cent) and the acquisition of new machinery or equipment (30.8 per cent). Table 7.42 shows that at the .05 level of significance that no activities were significant for Tasmanian wineries based on winery size. Western Australian wineries listed acquiring other knowledge ($F = 3.000$, sig. = .032), implementing new business strategies ($F = 3.222$, sig. = .025) and implementing organisational restructuring ($F = 2.680$, sig. = .047) as significant. Making significant changes to existing marketing strategies was also listed as being significant ($F = 10.048$, sig. = .000) for Western Australian wineries. The only activity listed as significant at the .05 level for New Zealand wineries was the acquisition of new machinery and equipment ($F = 2.346$, sig. = .015).

Table 7.41: Activities to support innovation at Tasmanian Western Australian and New Zealand wineries

Activity	Done to support innovation (TAS)	Done, though not to support innovation (TAS)	Not Done (TAS)	Don't know (TAS)	Done to support innovation (WA)	Done, though not to support innovation (WA)	Not Done (WA)	Don't know (WA)	Done to support innovation (NZ)	Done, though not to support innovation (NZ)	Not Done (NZ)	Don't know (NZ)
Introduce a new variety of grape	26.7%	73.3%	0.0%	0.0%	18.2%	6.1%	75.8%	0.0%	29.2%	6.2%	60.0%	4.6%
Use of new viticultural techniques	40.0%	27.7%	33.3%	0.0%	24.2%	21.2%	54.5%	0.0%	23.1%	20.0%	52.3%	4.6%
Acquire new machinery and equipment	60.0%	26.7%	13.3%	0.0%	21.2%	30.3%	48.5%	0.0%	30.8%	23.1%	44.6%	1.5%
Acquire new computer hardware and software	33.0%	20.0%	46.7%	0.0%	6.1%	36.4%	57.6%	0.0%	32.3%	24.6%	41.5%	1.5%
Acquire other knowledge (e.g. outsourcing for new techniques or intellectual property)	26.7%	46.7%	26.7%	0.0%	18.2%	9.1%	72.7%	0.0%	21.5%	16.9%	56.9%	4.6%
Implement new business strategies or management techniques	33.3%	27.7%	40.0%	0.0%	15.2%	9.1%	75.8%	0.0%	26.2%	18.5%	52.3%	3.1%
Implement organisational restructuring	60.0%	6.7%	33.3%	0.0%	18.2%	6.1%	57.6%	0.0%	24.6%	30.8%	40.0%	4.6%
Design (e.g. graphic design on labelling of bottles)	53.3%	6.7%	40.0%	0.0%	24.2%	15.2%	60.6%	0.0%	36.9%	21.5%	38.5%	3.1%
Market the introduction of new goods and services	26.7%	26.7%	40.0%	0.0%	27.3%	12.1%	60.6%	0.0%	29.2%	16.9%	52.3%	1.5%

Table 7.41: Activities to support innovation at Tasmanian, Western Australian and New Zealand wineries (continued)

Activity	Done to support innovation (TAS)	Done, though not to support innovation (TAS)	Not Done (TAS)	Don't know (TAS)	Done to support innovation (WA)	Done, though not to support innovation (WA)	Not Done (WA)	Don't know (WA)	Done to support innovation (NZ)	Done, though not to support innovation (NZ)	Not Done (NZ)	Don't know (NZ)
Market research	27.6%	40.0%	33.3%	0.0%	12.1%	12.1%	75.8%	0.0%	26.2%	18.5%	53.8%	1.5%
Significant changes to existing marketing strategies	33.3%	20.0%	46.7%	0.0%	18.2%	18.2%	63.6%	0.0%	26.2%	24.6%	47.7%	1.5%
Employee training	53.3%	13.3%	33.3%	0.0%	12.1%	15.2%	72.7%	0.0%	29.2%	33.8%	33.8%	3.1%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Table 7.42: Activities to support innovation at Tasmanian, Western Australian and New Zealand wineries based on winery size

Activity	F (TAS)	Sig. (TAS)	F (WA)	Sig. (WA)	F (NZ)	Sig. (NZ)
Introduce a new variety of grape	.374	.874	.877	.619	1.578	.119
Use of new viticultural techniques	1.605	.556	1.098	.453	1.241	.291
Acquire new machinery and equipment	-	-	1.868	.143	2.346	.015
Acquire new computer software	.374	.874	-	-	1.293	.255
Acquire other knowledge (e.g. outsourcing for new techniques)	.231	.942	3.000	.032	1.239	.293
Implement new business strategies or management techniques	-	-	3.222	.025	1.721	.080
Implement organisational restructuring	-	-	2.680	.047	.974	.541
Design	.451	.840	1.245	.363	1.323	.236
Market new goods and services	.323	.898	1.628	.203	1.060	.450
Market research	-	-	.988	.531	.974	.541
Significant changes to existing marketing strategies	-	-	10.048	.000	1.139	.374
Employee training	-	-	2.065	.107	.891	.635

Significance is measured at the .05 level. n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

7.11 Cooperative arrangements

The definition of cooperative arrangements used in this section is the same as the Statistics New Zealand (2011) definition (refer to Chapter 6 of this thesis) where such arrangements mean active participation with another organisation or individual for the purpose of innovation. 46.7 per cent of Tasmanian and 18.2 per cent of Western Australian wineries reported having cooperative arrangements that were for the purpose of innovation during the two years leading up to the 2016 financial year. In comparison, in New Zealand 23.1 per cent of wineries reported having cooperative arrangements in place in the 2015 survey.

Businesses or institutions that wineries engaged in cooperative arrangements with

Businesses or institutions that were engaged in cooperative arrangements with Tasmanian and Western Australian are detailed in Table 7.43. This table shows that for Tasmanian wineries the local industry (46.7 per cent) was the main source of engagement, followed by local suppliers (26.7 per cent). Overseas cooperative arrangements for Tasmanian wineries were reported as being primarily with overseas customers (26.7 per cent). Western Australian wineries reported much lower levels of cooperation than their Tasmanian counterparts. When the same questions were posed to New Zealand wineries in chapter 6 of this thesis, it was reported that competitors and other businesses from within the New Zealand wine industry and suppliers were most significant. Forms of overseas cooperative arrangements for New Zealand wineries were mainly with businesses from other industries (16.9 per cent).

Table 7.43: Businesses or institutions that Tasman and Western Australian wineries have cooperative arrangements with

Type of business or institution	Located in TAS (2016)	Located Overseas (2016)	Located in WA (2016)	Located Overseas (2016)	Australian national average (2016)	Australian agricultural average (2016)
Customers	46.7%	26.7%	6.1%	3.0%	36.5%	11.8%
Suppliers	26.7%	6.7%	3.0%	0.0%	35.5%	23.7%
Businesses from other industries	13.3%	6.7%	0.0%	0.0%	0.0%	19.9%
Competitors and other businesses from the same industry	20.0%	0.0%	3.0%	0.0%	23.5%	0.0%
Other businesses within the business group (e.g. subsidiaries or parent companies)	13.3%	0.0%	0.0%	0.0%	25.1%	16.2%
Universities or polytechnics	20.0%	0.0%	3.0%	0.0%	4.8%	8.4%
Government Research Institutes, other research institutes, or research associations	20.0%	6.7%	0.0%	3.0%	1.7%	0.0%

Source for the Australian national and agricultural averages: Australian Bureau of Statistics [ABS] (2018).

n = 15 (Tasmania); n = 33 (Western Australia),.

Activities where wineries engaged in cooperative arrangements

Table 7.44 shows the main activities undertaken by Tasmanian, Western Australian and New Zealand wineries who engaged in cooperative arrangements. Joint marketing or distribution was the main activity undertaken by Tasmanian wineries (33.3 per cent), followed by joint prototype development (13.3 per cent). Western Australian wineries listed joint prototype development (97.0 per cent) in first position, while joint production (9.1 per cent) was second. In a similar pattern to that of the Tasmanian wineries, New Zealand wineries in the 2015 survey stated that joint marketing or distribution was the main activity undertaken (15.4 per cent), followed by joint research and development (9.2 per cent).

Table 7.44: Activities where Tasmanian, Western Australian and New Zealand wineries engaged in cooperative arrangements

	TAS	WA	NZ
Activity	Yes	Yes	Yes
Joint marketing or distribution	33.3%	6.1%	15.4%
Joint production	6.7%	9.1%	3.1%
Joint research and development	0.0%	3.0%	9.2%
Joint prototype development	13.3%	97.0%	0.0%
Joint training	6.7%	0.0%	1.5%
Other	6.7%	3.0%	0.0%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Reasons wineries engaged in cooperative arrangements

Sharing costs and access to new distribution networks (equal at 33.3 per cent) were the leading reasons given by Tasmanian wineries for engaging in co-operative arrangements (Table 7.45). Access to new markets (26.7 per cent) was ranked second. Western Australian wineries cited

that sharing costs and access to production practices were first equal as the main reason given for engaging in cooperative arrangements (9.1 per cent). This was followed by access to management skills (6.1 per cent). No Western Australian wineries cited access to new distribution networks or access to new markets as reasons. No Australian national or agricultural averages were available for this question. New Zealand wineries provided a different range of responses when considering their reasons for cooperation. The need to spread risk (72.3 per cent) was the main reason given, followed by access to work practices (47.7 per cent).

Table 7.45: Reasons that Tasmanian, Western Australian and New Zealand wineries engaged in cooperative arrangements

	TAS	WA	NZ
Reason	Yes	Yes	Yes
Sharing costs	33.3%	9.1%	15.4%
Spreading risk	13.3%	3.0%	72.3%
Access to research and development	0.0%	3.0%	12.3%
Access to production processes	20.0%	9.1%	7.7%
Access to management skills	6.7%	6.1%	3.1%
Access to new distribution networks	33.3%	0.0%	9.2%
Access to work practices	0.0%	3.0%	47.7%
Access to financial resources	0.0%	3.0%	4.6%
Access to new markets	26.7%	0.0%	9.2%
Access to new suppliers	0.0%	3.0%	3.1%
Other	6.7%	3.0%	0.0%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

7.12 Networks and cooperation

Organisations which wineries reported having relationships with

The main organisation which Tasmanian wineries reported having relationships with for the purposes of cooperative marketing or promotion (Table 7.46) was the Department of Primary Industries, Parks, Water and the Environment (60 per cent). Discover Tasmania and their Local Council were second equal (53.3 per cent). The least contact was with local food and wine networks (20.0 per cent).

Table 7.47 details the organisations that Western Australian wineries reported having relationships with were their local council (72.7 per cent) followed by the Department of Agriculture (69.7 per cent). Wine Western Australia was ranked in third position (54.5 per cent). The least contact was reported to be with Wine Grape Growers Australia and Regional Grape Growers Associations (both at 21.2 per cent).

New Zealand wineries had stated in Chapter 6 that they had the most contact with were local councils (49.2 per cent) followed by regional councils (43.1 per cent). The least contact was with Regional Grape Growers Associations (6.2 per cent).

Table 7.46: Organisations which Tasmanian wineries had relationships with in 2016

Organisation	Type of relationship (2016)						
	None	Contact as required	Member	Cooperative marketing or promotion	Member and cooperative marketing or promotion	Cooperative marketing or promotion and contact as required	Other relationship
Discover Tasmania	46.7%	53.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Tourism Tasmania	33.3%	33.3%	33.3%	0.0%	0.0%	0.0%	0.0%
Wine Tasmania	33.3%	26.7%	33.3%	6.7%	0.0%	0.0%	0.0%
Australian Wine and Grape Authority	60.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%
Winemakers' Federation of Australia	60.0%	26.7%	13.3%	0.0%	0.0%	0.0%	0.0%
Wine Australia	60.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%
Tourism Industry Council of Tasmania	40.0%	26.7%	33.3%	0.0%	0.0%	0.0%	0.0%
Regional Grape Growers Association	66.7%	20.0%	13.3%	0.0%	0.0%	0.0%	0.0%
Department of Primary Industries, Parks, Water and the Environment	40.0%	60.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Department of Agriculture	53.3%	33.3%	13.3%	0.0%	0.0%	0.0%	0.0%

Table 7.46: Organisations which Tasmanian wineries had relationships with in 2016 (continued)

Organisation	Type of relationship (2016)						
	None	Contact as required	Member	Cooperative marketing or promotion	Member and cooperative marketing or promotion	Cooperative marketing or promotion and contact as required	Other relationship
Regional Wine Organisation	73.3%	0.0%	26.7%	0.0%	0.0%	0.0%	0.0%
Business Development Boards	66.7%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Local Council	40.0%	53.3%	6.7%	0.0%	0.0%	0.0%	0.0%
Regional Council	66.7%	26.7%	6.7%	6.7%	0.0%	0.0%	0.0%
Environmental Protection Authority	60.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AgriGrowth Tasmania	73.3%	26.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Central Government Organisations	60.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Local food and wine promotion group/network	46.7%	13.3%	33.3%	0.0%	0.0%	0.0%	0.0%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

n = 15.

Table 7.47: Organisations which Western Australian wineries had relationships with in 2016

Organisation	Type of relationship (2016)						
	None	Contact as required	Member	Cooperative marketing or promotion	Member and cooperative marketing or promotion	Cooperative marketing or promotion and contact as required	Other relationship
Tourism Western Australia	60.6%	24.2%	15.2%	0.0%	0.0%	0.0%	0.0%
Wine Western Australia	12.1%	54.5%	30.3%	3.0%	0.0%	0.0%	0.0%
Australian Wine and Grape Authority	33.3%	26.7%	33.3%	6.7%	0.0%	0.0%	0.0%
Winemakers' Federation of Australia	48.5%	24.2%	27.3%	0.0%	0.0%	0.0%	0.0%
Wine Australia	51.5%	30.3%	18.2%	0.0%	0.0%	0.0%	0.0%
Wine Grape Growers Australia	66.7%	21.2%	12.1%	0.0%	0.0%	0.0%	0.0%
Regional Grape Growers Association	39.4%	21.2%	33.3%	6.1%	0.0%	0.0%	0.0%
Department of Primary Industries, Parks, Water and the Environment	57.6%	33.3%	9.1%	0.0%	0.0%	0.0%	0.0%
Department of Agriculture	27.3%	69.7%	3.0%	0.0%	0.0%	0.0%	0.0%
Regional Wine Organisation	27.3%	24.2%	42.4%	6.1%	0.0%	0.0%	0.0%

Table 7.47: Organisations which Western Australian wineries had relationships with in 2016 (continued)

Organisation	Type of relationship (2016)						
	None	Contact as required	Member	Cooperative marketing or promotion	Member and cooperative marketing or promotion	Cooperative marketing or promotion and contact as required	Other relationship
Business Development Boards	66.7%	24.1%	6.1%	3.0%	0.0%	0.0%	0.0%
Local Council	24.2%	72.7%	3.0%	0.0%	0.0%	0.0%	0.0%
Regional Council	54.5%	42.4%	3.0%	0.0%	0.0%	0.0%	0.0%
Environmental Protection Authority	57.6%	42.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Central Government Organisations	63.6%	36.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Hospitality associations	60.6%	36.4%	3.0%	0.0%	0.0%	0.0%	0.0%
Local food and wine promotion group/network	51.5%	30.3%	15.2%	3.0%	0.0%	0.0%	0.0%
Other	97.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%

n = 33

7.13 Tourism and marketing

Wine and food festivals

As respondents could attend more than one festival, there were multiple responses to this question, and these added to more than 100 per cent. No Tasmanian wineries indicated that they did not attend any wine and food festivals. The Royal Hobart International Wine Show and the Southern Vineyards Open Weekend both ranked in first place (53.3 per cent). Tasmanian Red Wine Weekend ranked second with 33.3 per cent of respondents in attendance, while the Tasmanian White Wine Weekend and The Taste of Tasmania both ranked in third place with 26.7 per cent of wineries surveyed in attendance. 21.2 per cent of Western Australian wineries surveyed did not attend a wine or food festival. Unwined Western Australia was cited as the festival which most respondents attended (33.3 per cent). Nevertheless, the results suggested attendance at a wide range of different festivals and events.

Winery attributes for Tasmanian, Western Australian and New Zealand wineries

Based on the responses that fell into the extremely important or very important categories Table 7.48 shows that Western Australian wineries ranked the quality of the wines (90.9 per cent), the whole experience (87.9 per cent), and wine knowledge (77.5 per cent) as the most important winery attributes. The least important attributes were meeting the winemaker (36.4 per cent) and, perhaps surprisingly, the winery itself (42.4 per cent). No additional comments were provided by Western Australian survey participants even though 6.1 per cent selected the 'Other' category.

Atmosphere and setting along with the quality of the wines ranked first equal for Tasmanian wineries (86.7 per cent). The quality of the environment was viewed as important, and

consequently this ranked in second place (80 per cent). Wine knowledge and whether a tasting area was provided ranked third equal (73.3 per cent). The least important attributes for Tasmanian wineries were food (13.3 per cent) and wine awards received (26.7 per cent). Other attributes (73.3 per cent) listed by Tasmanian respondents that were cited as important included having a museum onsite and the availability of biodynamic wine.

The quality of the wines and the whole experience both ranked first equal for New Zealand wineries at 86.2 per cent. Atmosphere and setting and location were second equal (72.3 per cent), with the provision of a tasting area ranked in third place (66.2 per cent). The least important attributes according to New Zealand survey participants was the quality of the environment (29.2 per cent). Other important attributes listed by New Zealand wineries (6.2 per cent) included brand awareness, cellar door staff, outdoor landscaping and the provision of bed and breakfast facilities.

Table 7.48: Winery attributes for Tasmanian, Western Australian and New Zealand wineries

Attribute	TAS		WA		NZ	
	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response
Winery	42.4%	8	40.0%	8	52.3%	5 =
Tasting area	78.8%	4	73.3%	3 =	66.2%	3
Atmosphere and setting	35.8%		86.7%	1 =	72.3%	2 =
Quality of wines	90.9%	1	86.7%	1 =	86.2%	1 =
Wine awards received	39.4%		26.7%	9	41.5%	6
Knowledge of your wines	81.8%	3	73.3%	3 =	61.5%	4 =
Personalised and friendly service	57.6%	6	53.3%	6	52.3%	5 =
Meeting the winemaker	36.4%	9	60.0%	5	30.8%	7
Food	45.5%	7 =	13.3%	10	61.5%	4 =
Location	45.5%	7 =	46.7%	7	72.3%	2 =
Quality of the environment	76.7%	5	80.0%	2	29.2%	8
Whole experience	87.9%	2	66.7%	4	86.2%	1 =
Other	6.1%	10	73.3%	3 =	6.2%	9

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Regional attributes for Tasmanian, Western Australian and New Zealand wineries

Table 7.49 shows the rankings of regional attributes based solely on the responses that fell into the extremely important or very important categories in the Tasmanian and Western Australian surveys. For Western Australian wineries the quality of wines ranked as the most important attribute (90.7 per cent), followed by the prestige or character of a district (84.8 per cent). Festivals and events ranked in third position at 63.6 per cent.

Tasmanian wineries also ranked the quality of wines as being the most important regional attribute (86.7 per cent), followed by the proximity to a major city or destination (80 per cent). Festivals and events also ranked in third position (60 per cent). New Zealand wineries (Table 7.65) ranked quality of wines first equal with the prestige or character of a district (76.9 per cent) followed by the quality of the environment (67.7 per cent). Festival and events also ranked in third position (58.5 per cent), mirroring what Tasmanian and Western Australian wineries had reported for this particular ranking. Proximity to a major town or city was not perceived as an important regional attribute in any of the respondent groups.

Table 7.49: Regional attributes for Tasmanian, Western Australian and New Zealand wineries

Attribute	TAS		WA		NZ	
	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response
Prestige or character of the district	80.0%	2=	84.8%	2	76.9%	1=
Quality of wines	86.7%	1	97.0%	1	76.9%	1=
Quality of environment	53.3%	4=	57.6%	4	67.7%	2
Other attractions and festivals	20.0%	6	54.5%	5	43.1%	6
Festivals and events	60.0%	3	63.6%	3	58.5%	3
Scenery	40.0%	5	30.3%	7=	46.2%	5
Size	53.3%	4=	30.3%	7=	35.4%	7
Proximity to major city/ destination	80.0%	2=	36.4%	6	49.2%	4
Other	6.7%	7	6.1%	8	0.0%	8

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand). Note: '=' sign denotes equal placings.

Most important forms of media used to attract visitors to Tasmanian, Western Australian and New Zealand wineries

Based on those who responded with a ‘yes’ to the information sources listed (Table 7.50), word of mouth was regarded as the most important form of media when it came to attracting visitors to Tasmanian wineries at 86.7 per cent. This was followed by local or regional tourism organisations (80 per cent) and Tourism Tasmania (73.3 per cent). Western Australian wineries also cited word of mouth as the most important source (84.8 per cent), followed by wine shows (75.8 per cent). New Zealand wineries also stated that word of mouth was regarded as the most important form of media when it came to attracting visitors to wineries at 66.2 per cent. This was followed by visitor information sources (40 per cent) and mailing lists (38.5 per cent).

Table 7.50: Media information sources used by Tasmanian, Western Australian and New Zealand wineries

Media source	TAS	WA	NZ
Wine shows	46.7%	75.8%	43.1%
Wine and Food Festivals	60.0%	63.6%	53.8%
Wine clubs	46.7%	48.5%	47.7%
Retail trade	66.7%	57.6%	61.5%
Discover Tasmania	46.7%	-	-
Tourism Tasmania	73.3%	-	-
Wines of Western Australia	-	36.4%	-
Tourism Western Australia	-	30.3%	-

Table 7.50: Media information sources used by Tasmanian, Western Australian and New Zealand wineries (continued)

	TAS	WA	NZ
Media source	Yes	Yes	Yes
Tourism New Zealand	-	-	36.9%
Visitor information sources	66.7%	72.7%	63.1%
Local or regional tourism organisation	80.0%	66.7%	64.6%
Word of mouth	86.7%	84.8%	78.5%
Word of mouth	86.7%	84.8%	78.5%
Wine Tasmania	66.7%	-	-
Wine Grape Growers Australia	20.0%	18.2%	-
Australian Wine and Grape Authority	26.7%	33.3%	-
Winemakers' Federation of Australia	26.7%	24.2%	-
New Zealand Winegrowers	-	-	47.7%
Wine Australia	33.3%	27.3%	-
Mailing list	33.3%	66.7%	64.6%
Magazines	60.0%	48.5%	50.8%
Newspapers	33.3%	33.3%	30.8%
Radio	33.3%	12.1%	26.2%
Television	33.3%	18.2%	21.5%
Guidebooks	46.7%	27.3%	49.2%
Website	53.3%	57.6%	52.3%
Internet Promotion	53.3%	57.6%	56.9%
Online Social Networking	66.7%	72.7%	55.4%
Brochures	66.7%	57.6%	66.2%
Other	13.3%	15.1%	32.3%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Most useful information sources for to Tasmanian, Western Australian and New Zealand wineries

Based on the responses in the extremely important or very important categories (Table 7.51), word of mouth and online social networking ranked as the most useful for Tasmanian wineries (66.7 per cent) followed by Wine Tasmania (53.3 per cent) and the Local or Regional Tourism Organisation (46.7 per cent). Of interest is that the least valuable information source was reported as being the Winemakers' Federation of Australia (13.3 per cent). The Western Australian results show that word of mouth also ranked as the most useful (78.8 per cent) followed by Internet promotion (48.5 per cent) while visitor information sources ranked as the third most useful information source (45.5 per cent), while websites ranked fourth (39 per cent). The least valuable information source according to Western Australian wineries was Wine Australia (6.1 per cent).

New Zealand wineries stated that word of mouth was the most useful source (66.2 per cent) followed by visitor information sources (40 per cent) and mailing lists (38.5 per cent). The least valuable information source for New Zealand wineries was reported as being websites (16.9 per cent).

Table 7.51: Media information sources and their perceived usefulness to Tasmanian and Western Australian wineries

Media source	TAS		WA		NZ	
	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response
Wine shows	20.0%	8	12.1%	10=	18.5 %	11 =
Wine and Food Festivals	40.0%	4=	33.3%	5=	18.5 %	11 =
Wine clubs	40.0%	4=	12.1%	10=	20.0 %	10 =
Retail trade	46.7%	3=	30.3%	6=	29.2 %	6
Discover Tasmania	40.0%	4=	-	-	-	-
Tourism Tasmania	46.7%	3=	-	-	-	-
Wine Western Australia	-	-	24.2%	7=	-	-
Tourism Western Australia	-	-	33.3%	5=	-	-
Tourism New Zealand	-	-	-	-	21.5%	9=
New Zealand Winegrowers	-	-	-	-	20.0%	10=
Local or Regional Organisation	46.7%	3=	21.2%	8=	35.4 %	4
Visitor information sources	26.7%	6=	45.5%	3	40.0 %	2
Word of mouth	66.7%	1=	78.8%	1	18.5 %	11 =
Wine Tasmania	53.3%	2	-	-	-	-
Wine Grape Growers Australia	33.3%	5=	9.1%	11=	-	-
Australian Wine and Grape Authority	13.3%	9=	12.1%	10=	-	-
Winemakers' Federation of Australia	13.3%	9=	9.1%	11=	-	-

Table 7.51: Media information sources and their perceived usefulness to Tasmanian and Western Australian wineries (continued)

Media source	TAS		WA		NZ	
	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response
Wine Australia	33.3%	5=	6.1%	12=	-	-
Mailing list	40.0%	4=	21.2%	8=	35.4 %	4
Magazines	26.7%	6=	24.2%	7=	40.0 %	2
Newspapers	20.0%	7=	18.2%	9	66.2 %	1
Radio	20.0%	7=	9.1%	11=	20.0 %	10 =
Television	20.0%	7=	24.2%	7=	20.0 %	10 =
Website	26.7%	6=	24.2%	7=	16.9 %	12
Guidebooks	33.3%	5=	30.3%	6=	21.5 %	9 =
Internet Promotion	46.7%	3=	48.5%	2	26.2 %	7 =
Online Social Networking	66.7%	1=	39.4%	4	26.2 %	7 =
Brochures	46.7%	3=	33.3%	5=	20.0 %	10 =
Other	6.7%	10	6.1%	12=	16.9 %	12

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand). Note: '=' sign denotes equal placings.

Winery attitudes towards tourism at Tasmanian, Western Australian and New Zealand wineries

In comparing Tasmanian, Western Australian and New Zealand wineries' attitudes towards tourism (Table 7.52) the perception that cellar door visitors do not buy much wine was supported by 9.1 per cent of Western Australian wineries and 13.3 per cent of Tasmanian wineries. This is well under half of the figure reported by New Zealand wineries (32.3 per cent). Australian wineries reported higher overall figures than New Zealand when considering whether they considered tourist to be valuable.

When considering whether tourism attracted a wide range of customers to their winery, 87.9 per cent of Western Australian wineries either agreed or strongly agreed with this statement. 60 per cent of Tasmanian wineries also chose this category, 7.7 per cent lower than the 67.7 per cent figure reported by New Zealand wineries. Tourism was viewed as providing significant marketing opportunities by 81.8 per cent of Western Australian and 60 per cent of Tasmanian wineries; New Zealand reported the lowest figure across all three survey groups (47.7 per cent). The impact of tourism on sales of wine offshore was viewed with some scepticism by Western Australian wineries with 33.3 per cent either agreeing or strongly agreeing with this statement. Tasmanian wineries were in strong agreement (86.7 per cent) however, while 43.1 per cent of New Zealand wineries supported this statement.

The question of whether tourism contributed greatly to their business success saw 26.6 per cent of Western Australian wineries agree or strongly agree with this statement, while only 12.2 per cent of Tasmanian wineries chose these two categories. Both these figures are under half of the 52.3 per cent figure reported by New Zealand wineries. The overall benefits of tourism outweighing the negative impacts was strongly supported by Tasmanian wineries (90.9 per cent); 73.3 per cent of Western Australian wineries also concurred with this statement. New Zealand recorded the lowest figure across the three survey groups of those who either agreed or strongly agreed with this statement (40 per cent). Only 3 per cent of Western Australian wineries and 6.7 per cent of Tasmanian wineries either agreed or strongly agreed that tourism did not attract the kind of visitors that they wanted to their winery. New Zealand wineries recorded the highest percentage response with regards to this statement at 16.9 per cent.

Table 7.52: Winery attitudes towards tourism at Tasmanian, Western Australian and New Zealand wineries

Statement	TAS Strongly agree/ agree	WA Strongly agree/ agree	NZ Strongly agree/ agree
Cellar door visitors do not buy much wine	13.3%	9.1%	32.3%
Tourists are valuable	73.4%	93.9%	69.2%
Tourism attracts a wide range of customers to my winery	60.0%	87.9%	67.7%
Tourism provides significant marketing opportunities	60.0%	81.8%	47.7%
Tourism positively impacts the sales of my wine offshore	86.7%	33.3%	43.1%
Tourism does not contribute greatly to my business success	12.2%	26.6%	52.3%
The overall benefits of tourism outweigh the negative impacts	90.9%	73.3%	40.0%
Tourism increases awareness of my winery through word of mouth	66.7%	81.8%	66.1%
Tourism does not attract the kind of visitors I want to my winery	6.7%	3.0%	16.9%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Tourism and the local wine industry

The only category that Tasmanian respondents either strongly agree or agree with was that the promotion of tourism in a region brings more visitors to a winery (6.7 per cent) (Table 7.53). Of interest here is that Tasmanian wineries did not strongly agree or agree with any of the other statements, while Western Australian wineries did not agree with any of the statements provided at all. In comparison most New Zealand respondents agreed that the promotion of tourism in a region brings more visitors to a winery (32.3 per cent).

Table 7.53: Comparison of beliefs towards tourism and regionalism for Tasmanian, Western Australian and New Zealand wineries

Statement	TAS		WA		NZ	
	# stating strongly agree/ agree	Ranking based on % of response #	# stating strongly agree/ agree	Ranking based on % of response #	# stating strongly agree/ agree	Ranking based on % of response #
Tourism is important to the wine industry	0.0%	2=	0.0%	1=	16.9%	3
Promoting tourism in the region brings more visitors	6.7%	1	0.0%	1=	32.3%	1
Tourism needs to be encouraged in the wine industry	0.0%	2=	0.0%	1=	30.8%	2
The wine industry has much to offer the tourism	0.0%	2=	0.0%	1=	15.4%	4
The tourism industry has much to offer the wine industry	0.0%	2=	0.0%	1=	4.6%	5

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Wine tourism and product/brand awareness at Tasmanian, Western Australian and New Zealand wineries

Table 7.54 indicates a high level of agreement across all three groups of respondents when asked if wine tourism enhances product or brand awareness, with almost half of Western Australian wineries having strong agreement. Tasmanian wineries had the highest levels of disagreement.

Table 7.54: Wine tourism enhances product/brand awareness at Tasmanian, Western Australian and New Zealand wineries

	TAS	WA	NZ
Strongly Agree	33.3%	48.5%	21.5%
Agree	40.0%	42.4%	50.8%
Unsure	13.3%	9.1%	18.5%
Disagree	6.7%	0.0%	6.2%
Strongly Disagree	6.7%	0.0%	3.1%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Wine tourism and wine product differentiation at Tasmanian, Western Australian and New Zealand wineries

Table 7.55 shows that Western Australian and New Zealand wineries had the greatest levels of agreement when asked whether wine tourism helped to differentiate their wine from others. Tasmanian winery respondents exhibited a degree of uncertainty towards this statement, with 60 per cent stating that they were unsure whether tourism aided product differentiation. New Zealand wineries reported the highest percentage of wineries who disagreed with this statement (15.4 per cent).

Table 7.55: Tasmanian, Western Australian and New Zealand wineries belief in wine tourism helping to differentiate their wine from others

	TAS	WA	NZ
Strongly Agree	13.3%	33.3%	16.9%
Agree	20.0%	42.4%	32.3%
Unsure	60.0%	15.2%	30.8%
Disagree	0.0%	9.1%	15.4%
Strongly Disagree	6.7%	0.0%	4.6%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Wine tourism and mail order sales at Tasmanian, Western Australian and New Zealand wineries

Table 7.56 shows that there was some agreement across all three groups towards whether wine tourism helped to develop mail order sales. Tasmania had the most participants who agreed with this statement (53.3 per cent), followed by New Zealand (47.7 per cent) and Western Australia (36.4 per cent).

Table 7.56: Tasmanian, Western Australian and New Zealand wineries' belief in wine tourism helping to develop mail order sales

	TAS	WA	NZ
Strongly Agree	6.7%	30.3%	21.5%
Agree	53.3%	36.4%	47.7%
Unsure	33.3%	21.2%	13.8%
Disagree	0.0%	9.1%	15.4%
Strongly Disagree	6.7%	3.0%	1.5%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Wine tourism and Internet based sales at Tasmanian, Western Australian and New Zealand wineries

Tasmanian winegrowers were the most supportive that wine tourism helped to develop Internet based sales (Table 7.57). Western Australian wineries demonstrated the highest levels of disagreement or being unsure.

Table 7.57: Wine tourism helps to develop Internet based sales

	TAS	WA	NZ
Strongly Agree	53.3%	21.1%	21.5%
Agree	46.7%	45.5%	47.7%
Unsure	0.0%	15.2%	13.8%
Disagree	0.0%	21.2%	15.4%
Strongly Disagree	0.0%	6.1%	1.5%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Wine tourism and customer education

Tasmanian wineries recorded the highest level of strongly agreement that wine tourism could help to educate their customers (Table 7.58), while New Zealand recorded the lowest figure in this category (12.3 per cent). Across all three survey groups there appeared to be some uncertainty regarding this issue with Tasmanian respondents stating that 20 per cent were unsure, while Western Australia reported 21.2 per cent for this category. New Zealand wineries were the least certain, and 24.6 per cent chose the ‘unsure’ category. However, overall there was majority who agreed or strongly agreed with this statement.

Table 7.58: Wine tourism helps to educate my customers

	TAS	WA	NZ
Strongly Agree	66.7%	24.2%	12.3%
Agree	0.0%	36.4%	46.2%
Unsure	20.0%	21.2%	24.6%
Disagree	6.7%	9.1%	13.8%
Strongly Disagree	6.7%	3.0%	3.1%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Tourism Promotion

Table 7.59 shows that, based solely on the percentage of responses which fell into the extremely important or very important categories, Tasmanian wineries ranked public tastings first (66.7 per cent) and media familiarisation second (60 per cent). The use of a regional wineries brochure, wine exhibitions and shows or gaining tourism awards ranked third equal (53.3 per cent). Western Australian wineries ranked wine exhibitions and shows first (66.7 per cent) followed by regional tourist guides (57.6 per cent) and winery based events (39.4 per cent). Both Tasmanian and Western Australian wineries ranked holiday and travel shows as the least successful form of tourism promotion.

For New Zealand wineries wine trial or road signage along with winery based events ranked first (66.2 per cent) followed by winery based events (52.3 per cent) and the use of a regional wineries brochure (44.6 per cent). The least successful tourist promotion for New Zealand wineries were holiday and travel shows along with tourism awards (6.2 per cent).

Table 7.59: Tourism promotions that have been successful for attracting wine tourists to Tasman and Western Australian wineries

Tourism promotion	TAS		WA		NZ	
	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response	% of total responses	Ranking based on % of response
Regional wineries brochure	53.3%	3=	24.2%	7=	44.6%	3
Holiday and travel shows	0.0%	8	15.2%	8	6.2%	9
Wine and food festivals	40.0%	5=	33.3%	5=	23.1%	6
Tourism awards	53.3%	3=	36.4%	4=	6.2%	9
Media familiarisation	60.0%	2	33.3%	5=	18.5%	7
Public tastings	66.7%	1	24.2%	7=	24.6%	5=
Wine exhibitions/shows	53.3%	3=	66.7%	1	16.9%	8
Regional tourist guides	40.0%	5=	57.6%	2	29.2%	4
Winery based events	20.0%	6	39.4%	3	52.3%	2
Wine trail or road signage	46.7%	4	36.4%	4=	66.2%	1
Regional website	13.3%	7	27.3%	6	24.6%	5=

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

The question of who should be responsible for the promotion of wine tourism (Table 7.60) showed that all survey groups thought that regional tourism organisations should be responsible. Western Australian and Tasmanian wineries listed individual wineries and wine

industry associations in second and third place respectively, while New Zealand wineries ranked individual wineries and wine industry associations equally.

Table 7.60: Primary responsibility for promoting wine tourism

	TAS	WA	NZ
Regional tourism organisations	80.0%	48.4%	53.8%
Wine industry associations	6.7%	21.2%	23.1%
Individual wineries	13.3%	30.4%	23.1%

n = 15 (Tasmania), n = 33 (Western Australia), n = 65 (New Zealand).

Other wine tourism related promotional activities suggested by Tasmanian and Western Australian wineries

Other wine tourism related activities that Tasmanian respondents commented on were the needed for the development of a regional winery brochure in consultation with each vineyard and winery. Also put forward was the idea of profiling chefs along with notable television personalities or shows which visit the region. The development of group and tour schedules that focus on the Tasmania were also cited as potentially being beneficial. A greater degree of collaboration between Tourism Tasmania and Wine Tasmania was also noted as being important for the future of local wine tourism.

Western Australian respondents provided a range of comments as to what other wine tourism related promotional activities that they would like to see. These included wines from the region needing to be featured in reality television shows, the need for a well-promoted wine trail to encourage tourists to stay longer, and also the centralisation of tourism-related information within the Western Australian wine industry as there were too many sources presenting information and this was confusing local winegrowers. Joint cellar door promotions, promotion of the term ‘Great Southern’ instead of the ‘Great Southwest’, and better signage were also

cited as being needed. One respondent noted that regions should not be in charge of their own individual area within their state, and commented that this results in fragmented promotion, thereby wasting funds which could have been spent on a state-wide campaign. In order to counter this a more holistic approach to tourism was suggested. More meaningful and sustained main media campaigns by state and federal tourism bodies were also mentioned as the current approach towards wine tourism promotion in Western Australia was viewed by some respondents as one of mere tokenism.

Other participant comments related to wine tourism and sustainability from Tasmanian and Western Australian wineries

Tasmanian wineries stated that they felt that freight burdens impact on sustainability, and that this is always an impact on small businesses as it presents the business concerned with very high costs. Also cited was the need for more future research into corporate social responsibility issues and social justice issues along with the impacts of these on Tasmanian wineries.

Western Australian respondents pointed out that there were some issues with the Wine Federation of Australia [WFA] having two levels of sustainability (viticultural/environmental sustainability and winery environmental sustainability). Another respondent stated that sustainability of Western Australian wineries equated in their opinion to stable governance and laws, and that they felt that the current producer definition of sustainability meant that a lot of Western Australian wine producers were about to be out of business. Also noted in the responses was that the Federal Wine Equalisation Tax [WET] reform/eligibility proposals in Western Australia needed to be supported and enacted to help correct the supply and demand imbalance, improve market conditions and the margins for authentic winery producers.

7.14 Chapter Summary

The results from the Tasmanian and Western Australian wineries alongside the subsequent comparative analysis with their New Zealand based counterparts presented in this chapter has shown that there are many differing beliefs in terms of the value placed upon tourism and sustainable practices between the three survey groups. Of particular concern is the lack of value that Western Australian wineries appear to place on biosecurity, which also mirrors the attitude of New Zealand wineries within this topic area. Differing attitudes also exist between Australian and New Zealand wine producers when considering their attitudes towards the treatment of migrant workers; New Zealand wine producers appeared dismissive of the importance of this issue, whereas Australian wine producers thought the wellbeing of workers was of paramount importance. Throughout the results presented in this chapter it is interesting to see how attitudes towards sustainable practices change depending on whether wineries are forced into a situation whereby the schemes are mandatory nature (such as the SWNZ scheme) or voluntary (such as the nationwide Australian Entwine programme or the VinØ sustainable winegrowing programme in Tasmania).

The comparative analysis of the results presented in this chapter forms the foundation for the discussion that is the focus of Chapter 8 and aims to showcase what these findings potentially mean for the future of sustainable winegrowing practices and wine tourism within the Australian and New Zealand wine industries.

Chapter 8

Discussion

8.1 Chapter introduction

This chapter examines the insights that can be drawn from the research and their implications for understanding both wine tourism and sustainable winegrowing. It also will demonstrate the contribution and value that this thesis makes towards the existing body of literature within these areas. This will be undertaken using the framework depicted in Figure 1.1 as a guide. This framework showed that the significant research gaps within this topic area were noted as being in the areas of governance, consumer behaviour, biosecurity, eco-labelling, climate change related environmental issues and environmental innovation (including how winegrowers are adapting to climate change).

Chapter 1 also outlined that the primary aim of this thesis was to identify wineries' perceptions towards wine tourism and sustainable winegrowing practices in New Zealand. Further understanding and context of the New Zealand situation was provided through a cross-national comparison of winegrowers in cool climate wine regions (de Blij, 1985; Jackson & Schuster, 1987) to enable an investigation of their perceptions concerning sustainable winegrowing. This led to the formulation of the following six subsidiary questions.

1. Does the content analysis of international sustainable winegrowing programmes indicate that changes in governance and regulatory measures within the wine industry are influencing cool climate wine producers to adopt sustainable wine production practices?
2. Are cool climate wineries that engage in sustainable wine production practices more innovative than those who do not?

3. Do cool climate wineries that engage in sustainable wine production practices value the importance of social justice issues which affect their workers?
4. Do cool climate wineries that engage in sustainable wine production practices view eco-labelling as important in terms of differentiating their wine products from other existing market offerings?
5. Do cool climate wineries that engage in sustainable wine production practices have an adaptive or mitigative approach towards dealing with the effects of climate change?
6. Are cool climate wineries that engage in sustainable wine production practices doing so in order to enhance their relationships with consumers and wine tourists?

A robust discussion of the research findings is particularly pertinent given the novelty of the longitudinal and comparative research undertaken which forms the foundation of this study. The significant findings from the National Wineries Survey will now be discussed.

8.2 Sustainability and governance issues

The New Zealand wine industry is of considerable importance to regional economies as a result of its contribution to wine production and wine tourism (Baird, 2012; Hall & Gössling, 2016). Sustainability and the qualities of a natural environment are an important part of the brand positioning for New Zealand wine and tourism (Baird & Hall, 2014; Gabzdylowa, Raffensperger & Castka, 2009). However, the results of the research in this thesis indicate that there are substantial gaps with respect to the brand attributes that are communicated, and what is actually implemented at the firm level. Furthermore, although wine tourism is an important component of winegrowers' business strategies, as it provides opportunities for both immediate (cellar door) and long-term (retail) sales (Hall & Mitchell, 2008), a disconnect exists between winery sustainability practices and the involvement of winegrowers in tourism. Such a result reinforces previous research that found that the innovative practices of New Zealand

winegrowers who are engaged with cellar door sales are related to marketing - which itself appears related to the attraction of the wine tourist market segment—rather than sustainability (Baird & Hall, 2014). Winery sustainability practices are instead being driven by a top-down approach by the export-focussed national body, rather than tourism, or even what wineries themselves may want to focus on with respect to sustainability. Yet, as survey results and comments from respondents demonstrate, there is often substantial divergence between the interests and perspectives of winegrowers and national level initiatives. In some cases, this may lead to the substantial resentment of such initiatives, especially if the sustainability practices that winegrowers have to adopt to be part of SWNZ are not seen as providing an economic return. For some New Zealand wineries, the mandatory nature of this programme and the cost involved to be a member appears to be prohibitive. This effect appears to result in a group of wineries that regard themselves as penalised in terms of export potential purely by the inflexibility of the sustainability indicators of the SWNZ, rather than their preferred strategies. The mandatory nature of the programme for exporters also reinforces the impression that it has been developed as much to reinforce the brand positioning of New Zealand wine, rather than any commitment to actually be “sustainable”, especially given that the programme is focused on select environmental indicators, and ignores some of the social and labour dimensions of sustainability that are a hallmark of many United States wine sustainability programs (Hall & Mitchell, 2008; Myles & Filan, 2019) as seen in Chapter 5 of this thesis.

Sustainability, winery certification and commitment

The issue of voluntary versus mandatory membership was noted with the higher figures for certified sustainability programme membership amongst New Zealand wineries (refer to Section 7.71). This reflects the mandatory nature of this programme (New Zealand Winegrowers, 2018a) compared to the voluntary membership of the Australian programmes which feature in this thesis (Discover Sustainable Wine, 2019; Wine Tasmania, 2018a).

Issues with respect to certification show some interesting relationships in terms of winegrower commitment towards sustainability measures. For example, commentary by Tasmanian winery respondents pointed out that because a winery stated that it practiced sustainable winegrowing practices it did not necessarily mean that it was part of a certified sustainable winegrowing programme. The level of commitment towards sustainability was seen to be a significant factor for Western Australian wineries in terms of a number of the organisational definitions of sustainability (see Tables 7.17, 7.19 and 7.21). This survey group also offered statistically significant findings relating to the impact of sustainable practices and the potential benefits derived from sustainability. New Zealand and Tasmanian survey responses both exhibited a lower degree of commitment towards sustainability exhibited by survey respondents than their Western Australian counterparts. This suggests that Western Australian winegrowers appear to be more proactive in terms of becoming educated regarding the positive benefits that sustainability can provide their businesses with. It also shows that there is a gap in terms of the quality of education currently available to New Zealand and Tasmanian winegrowers about the benefits of sustainable winegrowing practices.

Awareness of sustainability programmes

The confusion which was found on the part of Tasmanian winegrowers as to whether there was a dedicated sustainable winegrowing programme in their area appears to relate in part to levels of awareness of the development of the VinØ program which was started in March, 2016 (Wine Tasmania, 2018a). The lack of a state-wide sustainability programme for Western Australia was noted by participants from this region, and nationwide programmes that they were part of such as EntWine national sustainable winegrowing programme, the Sustainable Winegrowing Australia (SAW), or McLaren Vale Sustainable Winegrowing Australia (MVSWGA) (Discover Sustainable Wine, 2019) featured in their responses as a result. This absence of a West Australian sustainable winegrowing programme could mean that communication around

what constitutes sustainable practices at the vineyard level is dictated by national schemes which do not directly address specific local concerns such as growing conditions.

Sustainability and new market entry

The ability of sustainable winegrowing practices to aide in the facilitation of new market entry was an area that New Zealand wineries approached with a high level of skepticism. Tasmanian and Western Australian wineries were much more open to this idea. The reason why New Zealand wineries exhibited such a different perception was due to the fact that there appeared to be a lack of tangible evidence that sustainable winegrowing practices was a key factor in new market entry. The commentary from New Zealand winegrowers which was gathered from the final comments in the 2015 survey saw this theme emerge, and this perception appears to be symptomatic of the fact that the New Zealand programme is mandatory as opposed to voluntary. New Zealand winegrowers expect to see some evidence that membership of the SWNZ programme and following the demands which are made by those in the position of governance is actually a financially worthwhile pursuit. After all, New Zealand Winegrowers (2018c, p. 5) state that the SWNZ programme is geared towards “Preparing and distributing timely, accurate information to New Zealand’s winegrowers is one of the most important ways we create value for our members.” If that value is not being effectively communicated, then it is not surprising that there is a growing resentment evident towards this programme amongst New Zealand winegrowers.

Evidence of the perceived benefits derived from the membership of sustainability programmes has not been fully examined in the wine industry, but has been studied by Rickenbach, Guries and Schmoldt (2006) in a forestry context. This study found that non-industrial private forest owners in southwest Wisconsin in the United States were more likely to engage in sustainability programmes dependent on the owner’s characteristics and willingness to co-

operate with others (Rickenbach, Guries & Schmoldt, 2006). For those who were not engaged in this voluntary southwest Wisconsin initiative, education and awareness were utilised to communicate the benefits of the sustainability programme; this resulted in higher levels of member satisfaction with the programme concerned for non-industrial private forest owners who opted to become a member of the programme (Rickenbach, Guries & Schmoldt, 2006). It would appear that a similar path could be employed by SWNZ towards New Zealand winegrowers as currently education, awareness and communication with programme members does not seem to be a priority, and this is resulting in winegrowers becoming disillusioned with the programme in its current state. Posch (2005) examined a sustainability programme based around Austrian industrial recycling plants and found that communicating a clear vision of what the programme was about alongside having clear targets that were to be achieved was crucial in increasing the involvement of programme members. Of interest in this study that this programme was voluntary in nature, and it is noted that “compulsory membership would be highly counterproductive” (Posch, 2005, p.233) in terms of achieving programme goals as members needed to be allowed to have the option of buying in to the ideals upon which this particular sustainability programme was based. Enforced governance was found to be detrimental to achieving the goals that were to be achieved, and voluntary membership was noted as increasing a sense of ownership of this Austrian sustainability programme by its members (Posch, 2005). Given what is currently happening within the New Zealand wine industry in relation to the SWNZ programme this is clearly an area where further research is required.

The importance of sustainability for providing a source of competitive advantage for wineries

Despite the international positioning of New Zealand wine and the country's branding, there is no consensus among the surveyed winegrowers toward the benefits of sustainability in terms of providing a competitive point of difference for New Zealand wineries (see Figure 6.7). This may be reflective of the relative lack of a clear financial return to wineries from such a position, or it may be because of wider industry attitudes and perceptions that were not the immediate subject of this thesis. Nevertheless, this sentiment was shared by Tasmanian and Western Australian wineries (see Figure 7.3), whereby it would appear that many Australian wineries are also still yet to see any tangible benefits from using sustainable practices as a tool to acquire competitive advantage. This point was also further reiterated by many respondents across all three survey groups exhibiting resistance to the idea that sustainable practices were important for the wine industry.

8.3 Corporate social responsibility issues

Migrant workers' rights

One of the key findings and contributions of this thesis to the existing body of knowledge within the area of sustainable winegrowing practices occurred when considering the topic of migrant workers' rights (refer to Table 7.18). Western Australian wineries and Tasmanian wineries both viewed this topic as being very important, while New Zealand wineries regarded it as a low priority. These results may reflect the time at which the New Zealand survey was undertaken which was when some of the visa changes to encourage more short-term migrant workers had only been operating for a short period of time. However, in the light of recent events which have occurred within the New Zealand wine industry where winery owners have been fined for exploiting seasonal migrant workers (Radio New Zealand, 2019; Skerrett, 2019)

this finding is quite disturbing, especially given that the New Zealand wine industry and the New Zealand Government are looking to form legislation that is designed to protect these workers. At the time of writing these matters are going through a consultative process (New Zealand Winegrowers, 2018c), and a key recommendation is that a greater involvement in this process from SWNZ could be beneficial to showing that this programme was actively involved in helping to shape Government policy in this area. Nevertheless, the lack of concern with social justice means that the New Zealand approach towards sustainable wine practices remains substantially different from those that operate in key markets for New Zealand wine, such as the United States, with possible implications for brand acceptance in the longer term.

Climate change

When examining whether wineries believed that climate change issues had an impact on how their organisation defined sustainability it was interesting to note that Western Australian and Tasmanian wineries possessed a far greater degree of awareness regarding climate change and its impact. This indicates that these wineries are more likely to alter their business practices (Linnenlucke, Griffiths & Winn, 2013; Winn et al., 2011) to meet the challenges that this issue presents in order to preserve wine quality (Galbreath, 2016; Jones & Goodrich, 2008; Quiroga & Igelsias, 2009; Schultz, 2016). In contrast, New Zealand wineries tended not to believe that climate change was not a concept that they would deem to be part of their organisational definitions of sustainability. This may reflect a lower level of awareness of the impact that changes in winegrowing conditions can potentially have (Ollat, Touzard & van Leeuwen, 2016; van Leeuwen & Darriet, 2016) amongst New Zealand winegrowers. Increasing awareness regarding climate change issues within the wine industry is also important as it also allows for the potential for information sharing and collaboration between wineries (Pickering et al., 2012). The results of this thesis may also suggest that the impacts of climate change and awareness regarding this is gaining much more focus within the voluntary sustainable

winegrowing schemes adopted by Tasmanian and Western Australian wineries, while New Zealand wineries under their mandatory national sustainable winegrowing programme appear to not be focussing on this issue. As a result of this finding, a key recommendation would be that sustainable winegrowing programmes need to actively communicate with their membership how climate change could impact on their wineries, and also be proactive in terms of detailing strategies which could be used to deal with the effects of changing climatic conditions. Similarly, the relationship between corporate social responsibility and sustainability was an area that polarised Tasmanian and New Zealand survey participants. Western Australian wineries were the only group who predominantly felt that corporate social responsibility had a lot of impact on their viewpoint with regards to sustainability.

8.4 Biosecurity

Both the New Zealand and Western Australian wine industries appear to have significant gaps in knowledge sharing within the context of sustainability and biosecurity. Tasmania, however, was the opposite in this regard, and was more advanced in terms of having a clear state wine biosecurity strategy (Wine Tasmania, 2018a). It could be argued that this is because of its island status and its long history of biosecurity management to protect its agricultural industry. However, the same arguments can also be applied to New Zealand (Baird, 2012; Hall, 2003, 2005). Although the New Zealand wine industry explicitly supports biosecurity strategies at the national border level (New Zealand Winegrowers, 2016) there is much more limited attention to biosecurity at the winery scale. Although there has been a slow increase in new wineries developing vineyard biosecurity strategies since 2004, less than a third of all wineries have mechanisms in place. This is potentially a major management issue for wine tourism and tourism in rural areas given the risks that visitors represent to vineyards and previous breaches of biosecurity (Hall, 2003, 2005).

Nearly half of the New Zealand wineries surveyed report that visitors are able to wander freely among their vines (refer to Table 6.27 in Chapter 6). This attitude towards risk mitigation suggests that a more cautious approach that is underpinned by a higher level of awareness with regard to the consequences that a disease outbreak could have for the New Zealand wine industry is required. In 2015, just under half of the wineries surveyed (43.1%) indicated that they were unsure of whether the current level of information available regarding biosecurity threats that they received was adequate, which was a figure similar to that of the previous survey (refer to Figure 6.8 in Chapter 6). Nevertheless, 55.4% of wineries surveyed in 2015 believed that there was no need for a biosecurity component within the SWNZ scheme (refer to Section 6.6.5), which could be a potential avenue to better communicate biosecurity management to winegrowers, especially given that one of the key objectives of the New Zealand Winegrowers biosecurity strategy is ensuring that “maximising member awareness of potential biosecurity threats and their participation in biosecurity activities to mitigate risk” (New Zealand Winegrowers, 2018c, p. 23). Without protection from disease or invasive species, any long-term strategies that wineries have in place with regard to sustainability initiatives will be threatened (Poitras & Getz, 2006). Of note here is that biosecurity also was one of the areas noted in the content analysis (refer to Chapter 5) that international sustainable winegrowing programmes needed to address, so the problems found through the longitudinal and comparative findings in this study serve to support this finding. In order to deal with the issues presented in this section it is recommended that better information sharing mechanisms and a greater focus on education regarding biosecurity issues is provided by sustainable winegrowing programmes, and a more proactive rather than reactive approach is taken in this area.

8.5 Consumer behaviour, consumer awareness and sustainability

The value of sustainable practices within the context of building consumer awareness (refer to Table 7.20) was viewed by Australian wineries as being important to their business, while New Zealand wineries struggled to see any benefits. This is a potentially surprising result given that SWNZ is part of a push to integrate sustainability into New Zealand's national wine brand (New Zealand Winegrowers, 2018c), and which is closely tied-in with New Zealand's 100% Pure branding and campaign that is promoting New Zealand wineries to key visitor markets (Tourism New Zealand, 2017). In addition, sustainability is regarded as significant in attracting the emerging Generation Y and millennial wine consumer markets (Axelson & Swan, 2012; Byrd et al., 2016; Fountain, 2018; Kruger, Rootenberg & Ellis, 2013; Lee et al, 2017; Poisson & Chen, 2010; Yuan et al., 2004). Nevertheless, it is in keeping with some of the findings of other questions in the survey with respect to certification and its benefits.

Participant comments relating to New Zealand wine tourism and sustainability yielded some interesting responses, and these become particularly important when considered within context of the following statement from New Zealand Winegrowers (2018c, p.11) from their most recent Annual Report:

Whether it is rules around grape and wine production and processes, export requirements, labelling, licensing, labour, or a dozen other topics, we endeavour to provide clear and concise guidance to help our members focus on what they do best: growing grapes and making wine.

When considering the vagueness of this statement, it is not surprising that resentment towards the SWNZ programme exists amongst New Zealand winegrowers. This was noted in the commentary offered by respondents who stated that SWNZ were missing the mark in terms of branding and communicating the economic returns which could be gained from being a

member of the SWNZ programme. Another respondent pointed out that New Zealand leads the world in the number of SWNZ members who invest in organic, biodynamic and sustainable practices - yet it does not promote this fact. This clearly goes against New Zealand Winegrowers' (2018c, p.8) own assertion that they "pay careful attention to areas where change is happening or is needed" as a core focus of the SWNZ programme.

Eco-labelling

Given that there is a growing need for the end consumer to be able to access the appropriate information regarding what defines quality eco-certification at the point of purchase (Castka & Corbett, 2016; Delmas & Grant, 2014; Forbes et al., 2012; Pomarici, Amato & Vecchio, 2015) it is not surprising that Australian wineries cited eco-labelling as being a beneficial way of imparting information regarding sustainable practices. In particular, the response to this statement from Tasmanian wineries saw that eco-labelling was valued as it gave products dimensions of credibility and comprehension (Pomarici, et al., 2015; Schäufele, 2014)., which together form the basis of consumer awareness consumer acceptance and consumer behavioural change (Pomarici, et al., 2015; Schäufele, 2014). In stark contrast, New Zealand wineries indicated that they are yet to see any benefits from featuring eco-labels on their bottles, despite the clear connection that would exist to the country's national wine branding (New Zealand Winegrowers, 2018c).

Sustainability and the qualities of a natural environment are an important part of the brand positioning for New Zealand wine and tourism (Gabzdylova, Raffensperger & Castka, 2009; Hall & Baird, 2014). However, the results of this thesis indicate that there are substantial gaps with respect to the brand attributes that are communicated nationally and what is actually implemented at the firm level. In addition, educating New Zealand wine consumers with regards to what particular eco-labels represent is potentially something that both SWNZ and order to resolve this disconnection. Nevertheless, this should probably be undertaken in light

of a better understanding of why there is such a divide between national wine marketing strategies and what is happening at the winegrower level. For example, the benefits of strong supplier and distributor relationships which are derived through sustainable practices were definitely recognised by Australian wineries. In contrast, New Zealand wineries appeared to question whether it was important to choose suppliers and distributors who put sustainability at the forefront of their business practices, and it appeared that many participants simply developed relationships with other business regardless of their whether they advocated sustainability as a core value for their business.

In a similar pattern to that seen with supplier and distributor relationships, Australian participants also indicated that sustainable winegrowing practices had allowed for the development of new business opportunities, while New Zealand wineries remained less convinced. When considered within the context that New Zealand wineries have been seen to be traditionally risk averse in past iterations of the National Wineries Survey (Baird, 2012) these results are hardly surprising. A proven track record of success appears to be required before many New Zealand wineries are willing to engage in seeking business opportunities and collaborating with other businesses.

Attracting visitors to wineries

Using sustainable winegrowing practices as a drawcard to attract wine tourists was met with indifference from all three survey groups. The fact that this occurred is important as it demonstrates that the perception provided from a number of papers that sustainable production practices are something that wine tourists value, and which consequently motivate visitation (Byrd et al., 2016; Jones et al., 2015; Santos, Ramos & Almeida, 2017) is incorrect, at least in the Australian and New Zealand context. This also shows that there is a clear need for research which focuses on the demand side of the wine industry to examine this issue as there is

potentially a disconnect between the goals of sustainable winegrowing programme goals and the expectations of wine tourists.

8.6 Sustainability and risk reduction

Sustainable winegrowing practices and managing financial, operating, legal and regulatory risk

A cautious approach was taken by New Zealand wineries as to whether sustainable winegrowing practices yielded further potential sources of revenue. It was noted in the commentary from New Zealand participants that if they did not see a direct economic benefit from sustainable practices then this made them question the viability of engaging in these practices altogether. Given that Australian survey participants reported that they believed that sustainability was important for revenue growth, this suggests that the New Zealand responses could be, in part, due to the mandatory nature of the SWNZ programme versus the voluntary membership of the sustainability programmes which the Australian wineries surveyed participated in. This finding demonstrates that trying to find a balance between sustainable winegrowing practices and the competitive advantage and financial returns which wineries are striving for (Carmichael & Senese, 2012; Hall, 2010; Shaw, Lubell & Ohmart, 2011) is a point of contention which those in positions of governance within the wine industry need to be aware of.

When considering the ability of sustainable winegrowing practices to lower financial and operating risk there was also a definite contrast in responses across the three survey groups. The positive attitude towards this statement shown by Western Australian wineries was not echoed by their Tasmanian and New Zealand counterparts. In the New Zealand case, it could be argued that the costs associated with joining the SWNZ programme actually negate the idea of cost savings from the outset. Given that in the responses received in the 2015 New Zealand

survey there are those who questioned the cost of joining the programme versus the benefits that they are receiving as members, which repeats similar findings in the 2010 iteration. The differences found in terms of whether sustainable winegrowing practices helped to lower legal and regulatory risks also saw Western Australian and New Zealand wineries both presenting results that illustrated division over this topic. However, Tasmanian wineries considered the impact of sustainable practices in this area to be important which may highlight the role of local environmental factors as well as different regulatory environments.

Using sustainable winegrowing practices as a way of leveraging price premiums for products was also something which was not universally accepted within the New Zealand survey. Out of the three survey groups Tasmanian and Western Australian participants felt that the adoption of these practices did allow them to justify charging a price premium to consumers, indicating that sustainable winegrowing practices represented an important part the marketing strategy of the wineries concerned (Flores, 2018; Hall & Mitchell, 2008; Montella, 2017; Pomarici, Vecchio & Verneau, 2014), and the higher quality of the production processes used justified the premium pricing which was applied to the end product.

Reduction of greenhouse gas emissions, waste and energy consumption

There appears to have been higher degree of communication amongst the Australian wine industry than what has occurred in New Zealand with regards to the potential benefits which sustainable winegrowing can offer in terms of helping to reduce greenhouse gas emissions. The need to invest more time and money into promoting these benefits has been seen to be critical as wineries begin to experience the effects of climatic change (Christ & Burritt, 2013; Jones et al., 2005; Webb, Whetton & Barlow, 2008). The New Zealand wine industry appears to need to adopt a much more proactive stance to greenhouse gas emission reduction. This is likely to also be in keeping with the present New Zealand government's desire to include agriculture within its climate change strategies (New Zealand Government, 2019). Reminding

winegrowers about the the intensive carbon footprint that both wine production and distribution cause (Barber, Taylor & Deale, 2010) through better communication and information dissemination needs to occur within the New Zealand wine industry so that winegrowers are not in the position where they are being reactive to problems that could see substantial changes to the quality of their harvests as well as perceptions of the New Zealand wine brand being a form of greenwash.

The need to reduce energy consumption was one area in which a consensus was reached across all three survey groups, demonstrating that this is a major issue for wine producers. This particular finding is of interest when considering the division that was seen over the topic of greenhouse gas emissions (see above) and the fact that non-renewable energy usage for wine production is potentially harmful to the environment (Christ & Burritt, 2013; Jones et al., 2005; Webb, Whetton & Barlow, 2008). It would appear from the findings that reducing energy consumption is therefore one area where sustainable winegrowing initiatives are succeeding. One reason for this may be that wineries can clearly see the results of such measures as being beneficial to their financial returns.

In contrast, there was a substantial difference between the attitudes of New Zealand and Australian winegrowers when considering the importance of benefiting from practicing sustainable waste reduction methods. Solid waste generation is a serious issue within sustainable wine production (Alonso, 2010; Barber, Taylor & Strick, 2009; Tee, Boland & Medhurst, 2007; Walsdorff, Van Kraayenburg & Barnardt, 2005). Issues surrounding waste disposal have called for clear rules and regulations to be enforced (Christ & Burritt, 2013; Forbes & De Silva, 2012; Pullman, Maloni & Dillard, 2010; Sogari et al., 2010) and it has been argued that stricter industry governance ensuring all wineries follow appropriate waste disposal

practices is needed (Devesa-Rey et al., 2011). Given the attitudes of New Zealand winegrowers in this study it would appear that this is another area where SWNZ need to put more effort into both education and communication around the importance of waste disposal protocols and the benefits that this has for the environment.

Nevertheless, despite differences in the implementation of measures to reduce waste the topic of waste reduction and the reduction of toxicity of harmful chemicals was seen by all survey groups as a significant issue. This is unsurprising as, despite the seeming growth in sustainable winegrowing programmes, chemical use has become more widespread as wineries seek competitive advantage (Ruggieri et al., 2009). The use of chemically treated timber in vineyards, as well as the use of herbicides, pesticides and synthetic fertilisers have all proven to be problematic (Forbes et al., 2009; Marshall et al., 2010), alongside the risk of contamination to soil and water sources (Gabzdylova et al., 2009; Hughey et al., 2005; Santiago-Brown, Metcalfe, Jerram & Collins, 2015). However, the adoption of reduced chemical use practices may well depend on tangible benefits with respect to yield and economic return before they are adopted if the example of energy reduction is applied to chemical use.

8.7 Innovation

Introduction of innovation

When considering the degree of innovativeness exhibited by all three survey groups it was apparent that there were elements of risk aversion present. However, this aversion existed within different categories for each group. Risk aversion amongst wineries towards innovation is not a new phenomenon; this pattern had also presented itself during the 2010 New Zealand wineries survey where the implementation of innovation within existing goods and services

was noted as one particular area which local wineries were reluctant to pursue (Baird, 2012). The findings in this thesis have found that this risk aversion still exists, and not only at a local but at a cross-national level as well. Marks and Mortensen (2003) and Kaine et al. (2007) both noted that the prospect of failure if an innovation is rendered unsuccessful is often too great for many business to endure. Arguably, given the challenges that have been faced by New Zealand based wineries due to past oversupply issues (Deloitte, 2010) it is hardly surprising that there is a reluctance to commit large amounts of capital to innovation.

The lack of sales revenue which was directly attributed to goods or services which had undergone significant improvement further demonstrates that all three survey groups appeared to be approaching innovation with a degree of caution. The wine industries within which each of the three survey groups operate are not reliant on the constant introduction of innovation in order to assure ongoing growth in their existing revenue streams. For example, New Zealand wineries decreed that less than ten per cent of sales came from significantly improved goods or services, indicating that the main forms of innovation being undertaken at the time this survey was conducted lie within the other categories that were being investigated.

Improvements made to business processes

The desire to employ innovative practices to improve operational processes was one area where there was evidence of a slightly more proactive approach on the part of Tasmanian and New Zealand wineries. Wineries were able to make these improvements either by themselves or in partnership with others. The results of the 2010 New Zealand survey indicated that there is a gradual move away from past reluctance to implement or adopt new or significantly improved operational processes. The results also further the substantial body of research on collaboration and co-operation within wine clusters and networks (Aylward 2005; Dana & Winstone, 2008;

Dana et al., 2011; Francioni, Vissak, & Musso, 2017; Hira & Bwenge, 2011; Lewis, Byrom, & Grimmer, 2015; Taplin & Breckenridge, 2008; Touzard, 2010), by bringing an innovation perspective to such research. However, major questions remain with respect to the differences in cooperative practices and their differential use for innovation as cooperation may occur through innovation in some areas but not others. This was shown to vary between regions. For example, Western Australian wineries did not have a focus on continuous improvement of their operational processes. Therefore, a key question remains as to whether the different focus on innovation within networks is a function of regional needs, culture or the activities of key actors, or some combination of all three.

Similar issues occur with respect to improvements made to organisational and managerial processes. For example, Tasmanian wineries placed great emphasis on partnership in relation to improvements made to organisational and managerial processes which was well above the Australian national average. This supports past studies which have highlighted the significance of process innovations within the wine industry (Baird, 2012; Bessant et al., 2009; Doloreux et al., 2013; Giuliani et al., 2011; Ohmart, 2008b; Yuan et al., 2006). New Zealand wineries also demonstrated levels of innovation in this area that were well above the national and agricultural averages. However, Western Australian wineries were well behind national levels of innovation in this area.

Having the ability to make improvements to sales and marketing methods proved to be the most important area for innovation across all three survey groups. Not only was in-house development of these methods occurring, but also the importance of knowledge sharing and collaboration was noted, particularly for Tasmanian wineries (refer to Table 7.36). This reflects past international research into this area (Aylward & Zanko, 2006; Gilinsky et al., 2008; Giuliani et al., 2011) and also reiterates the importance within the wine industry of networks that enable the dissemination of knowledge in order to both increase revenue and create brand

awareness for local wineries via improved marketing (Alonso & Bressan, 2013; Doloreux et al., 2013; Hira & Bwenge, 2011; Pickering et al., 2012; Taplin & Breckenridge, 2008). What is currently unknown, however, is whether innovation in sales and marketing is purely related to winery level marketing or also includes support for regional wine marketing initiatives. Similarly, there is no research in the wine marketing innovation literature as to whether changed practices are domestically or internationally oriented.

Reasons for innovation

A wide range of reasons were given for innovation across the three survey groups. Nevertheless, the desire to become more productive whilst simultaneously finding ways in which to reduce costs was a common theme. Despite concerns over sustainable practices which have been previously discussed, both New Zealand and Western Australian wineries cited the need to reduce environmental impact as being one of their key reasons for innovation. Also notable was the value placed by survey participants across all three groups on being able to respond to new market opportunities through embracing innovation. This suggests that given the apparent initial risk aversion shown by wineries in terms of considering innovation when it came goods and services and their operational processes that a point may have been reached where innovation can no longer be ignored. This is particularly pertinent if there are distinct and clearly perceived economic and environmental benefits which can be derived from introducing new or improved techniques or technologies.

Sources of ideas, activities and information for innovation

The ability of winery staff to provide information and new ideas which could serve to inform innovation was a common theme amongst all three survey groups. However, relying on staff was not the only way in which wineries sourced ideas; online information and books and

journals also proved popular. A point of interest with regard to this topic is that the pattern noted in the 2010 survey where Government research institutes were cited as being amongst the least used source for information regarding innovation also occurred in the New Zealand 2015 survey; this trend was also mirrored by Australian survey participants as well. This suggests that knowledge transfer in this area is potentially poor despite the development of wine and viticultural research clusters between industry and institutions.

The range of activities that were cited by the three survey groups illustrates that each group is at a different phase in terms of what is valued as being appropriate in terms of supporting mechanisms to aid innovative activity. A point to note in this regard is that, apart from the acquisition of new machinery to improve viticultural practices, aspects of marketing such as design were high on the agendas of many survey participants. The value placed on product knowledge and service at not only the cellar door but at the production level as well is reflected by employee training and the acquisition of knowledge both being ranked highly as innovative activities. This was particularly pertinent for Western Australian wineries where the size of the winery (refer to Table 7.43) was found to be a significant factor in the undertaking of such activities. This finding supports the research of Spielmann (2017) who recognised that winery size was a determinant on whether or not wineries adopted innovation. Running an efficient wine tourist attraction using innovative techniques was the focus of a study by Karagiannis and Metaxas (2019); findings from this research also indicated that winery size not only determined whether or not wineries were able to implement innovations, but also if the wineries concerned were able to sustain these innovations for over a long-term period (Karagiannis & Metaxas, 2019).

It is possible that the adoption of sustainability practices, as with the significance of wine tourism in business practices, may be a function of the stage that each winery is at in its life

course, and/or the extent to which they are family-owned firms. However, there appeared to be no firm statistical support for that observation in the present study. Furthermore, although larger New Zealand winegrowers appear more innovative than smaller ones (Baird & Hall, 2014) there is no evidence to suggest that they are inherently more committed to sustainability. Indeed, although further confirmation is necessary, it is highly likely that commitment to SWNZ is associated with it being a requirement for export-marketing support; therefore, this raises significant future research questions with respect to the role of regulatory and institutional structures in influencing the adoption of sustainable businesses practices.

8.8 Winery profile

Ownership status

The difference that was shown between the levels of partnership and sole proprietorship at Tasmanian and Western Australian wineries when compared to New Zealand wineries represents a point of interest when viewed in the context of Getz and Carlsen's (2000) assertion that wineries, depending on size, approach market entry with differing goals. Partnering with other like-minded wine producers is noted as being a solution to overcoming resource and production capability restrictions (Edwards, 1989; Getz & Carlsen, 2000; Jones, Singh & Hsiung, 2015; Stewart et al., 2008; Williams & Kelly, 2001), and this clearly appears to be happening with Australian based survey respondents. Results for the New Zealand wine industry suggests that due to the market fluctuations experienced since the 1990s through oversupply issues (NZ Wine, 2011), wineries have taken note that there is no place for the complacency in service delivery that Simpson and Bretherton (2004) state can occur when wineries opt to not engage in sharing ideas and innovative practices. Survival for many New Zealand wineries appears to be based more upon having the ability to provide a wine tourism

experience which involves direct contact with the winemaker, which supports Frochot's (2000, 2003) contention that this was an important element in setting the service level available at smaller wineries apart from that of their larger counterparts.

8.9 Cellar door sales

The high numbers of wineries across all three groups surveyed in this thesis who offered cellar door sales served to highlight the fundamental importance of consumer interaction as part of an overarching wine tourism strategy (Azzurro, Richards & Bruwer, 2017; Bruwer, Charters & O'Neil, 2001; Hall, 1996, Hall & Johnson, 1997; Hall & Prayag, 2017; Lockshin, Saliba & Hirche, 2015). However, when assessing whether wineries felt that cellar door sales were important to their business, it is of interest to note the fact that for New Zealand wineries the importance of cellar door sales had continued to decline in line with the trends reported over the past three iterations of the New Zealand National Wineries Survey. This suggests that New Zealand wineries have become less convinced about the ability of cellar door visitation to convert into direct sales of wine products (Alant & Bruwer, 2004; Alonso & Northcote, 2008; Loubser, 2004) relative to other sales avenues, and this shows that this is still a contentious issue amongst New Zealand vineyards. Tasmanian and Western Australian wineries, however, reported the opposite effect, and believed that cellar door sales were very important for introducing wine tourists to their brand (Alonso & O'Neill, 2009; Azzurro, Richards & Bruwer, 2017; Santos, Ramos & Almeida, 2017).

Tasting room facilities

Charging winery visitors for the privilege of sampling wines has long been a topic of considerable debate around their potential to create a positive or negative cellar door experience (Alonso et al. 2008; Bruwer et al., 2012; Charters et al., 2009; Dodd, 1995; King & Morris, 1997b; McNamara & Cassidy, 2015; O'Neill, Palmer & Charters, 2002; Thomas et al., 2010;

Travers, 1999; Vlachvei & Notta, 2009; Wilson, 2016). The charging of tasting fees was seen as being an obstacle towards the encouraging winery visitation by Tasmanian and Western Australian wineries, which supports the research of Treloar et al. (2008) into the negative impacts that such fees cause. This finding was contrary to the position of New Zealand wineries on this issue, who saw no issue with tasting fees as an impediment in developing customer loyalty.

Services

The ability of wineries to provide wine tourists with an experience which is unique through the variety of services which they offer (Charters & O'Neill 2000, 2001; Dodd & Gustafson, 1997; Lee, Madanoglu & Fritz, 2018; O'Neill & Charters 1999, 2000; O'Neill & Palmer 2004; Pan et al., 2008; Telfer, 2001a) alongside service quality dimensions has continued to be significant in the New Zealand wine industry. The ongoing importance of educational aspects of the winery experience such as the provision of winery tours and wine tasting (Charters & O'Neill, 2000, 2001; Dodd & Beverland, 2001; Kendziorek 1994a, b, c, d; Lockshin & Knott, 2009; O'Neill & Charters, 1999, 2000; Pan et al., 2008) were noted as still being an important form of customer engagement for New Zealand wineries. The market for hosting functions at wineries had also grown, while the growth in restaurants which had been reported in the 2010 New Zealand National Wineries Survey had appeared to slow down. Tasmanian wineries, however, noted that food and wine pairings were still a key element of their cellar door experience, which supports research into the popularity of combining these elements (Alonso, Bressan, O'Shea & Krajsic, 2015; Cogan-Marie, Charters & Velikova, 2016; Singh & Hsiung, 2016). The hosting of events and festivals was the top service offered by Western Australian wineries, acknowledging the importance of the cross-promotional opportunities on offer (Bruwer & Kelly, 2015; Gómez, González-Díaz & Molina, 2015; Houghton, 2001, 2002; Lee, Sung, Suh & Zhao, 2017; Yuan et al., 2005), although the substantial differences between

respondents also highlights the different winegrower and regional emphases with respect to business strategy.

Facilities

The encouragement of repeat visitation (Charters & O'Neill, 2001) through ensuring that a broad range of facilities were on offer was important for all three groups that were surveyed. Facilities are an important component for wineries who are wanting to increase direct sales of wine at the cellar door (Alonso et al., 2008; Bruwer et al., 2012; Dodd, 1995; Dressler, 2017; O'Neill, Palmer, & Charters, 2002; Thach & Cogan-Maries, 2018) Motivating winery visitation through unique points of difference (Alebaki, Menexes & Koutsouris, 2015; Brown & Getz, 2005; Brown & Smith, 2010; Bruwer & Rueger- Muck, 2018) has also become prevalent, with examples of this seen through the incorporation of art displays and concert facilities onsite at some New Zealand and Australian wineries to the point that this is now a feature of Summer music tour operations.

Accessibility for disabled patrons is different between the proactive approach in this area undertaken by New Zealand wineries versus the less inclusive approach shown by both Tasmanian and Western Australian wineries. The inconsistency in approach in this area highlights the point made by Beames (2003) that wineries needed to be more inclusive when considering disabled patrons. Of interest here is that Vila, Darcy & González (2015) also noted that in a study of Australian wineries increasing accessible tourism options was needed, and that wineries could in fact use this as a form of competitive advantage if these options were provided.

Products

The role that products play in reinforcing the attributes which set a particular wine region apart from its competitors (Barber et al., 2008) whilst providing an additional source of revenue

(Barber et al., 2008; Dodd, 1995; Dodd & Bigotte, 1997; Eustice, McCole, & Rutty, 2019; Forbes & Kennedy, 2016; Ferreira & Hunter, 2017) was acknowledged by many survey participants. Given that a memorable winery visit increases the chance of repeat visitation (Madonna, 1999), it was interesting to note that for New Zealand wineries, company branded merchandise had become more important than in previous iterations in the survey time series. Examples of these were seen with wineries expanding the range of products on offer to include branded tote bags, books and gift packages, as well as company branded tasting notes which wine tourists could take with them. Clearly, the post-visit experience (Barber et al., 2008) has become an integral part of the promotional strategy of wineries as company branded promotional material, company branded merchandise and regional promotional material were all acknowledged as important tools for marketing not just individual wineries but also wine regions.

Wine tourist age demographics

All three survey groups illustrated that there is a growing demand from the 18-29 year age group for wine tourism activities and that in order to grow this market a greater level of promotion is needed. This supports the assertions found in research based on wine tourism and Generations X, Y and the millennial market (Beverland, 2001; Bruwer, 2002a, 2002b; Carlsen et al., 2006; Cohen & Ben-Nun, 2009; Flores & Medeiros, 2016; Fountain, 2011; Fountain & Charters, 2010; Garibaldi et al., 2017; Getz & Carlsen, 2008; Hussain, Simeon & Sayeed, 2016; Szolonki, 2018; Treloar et al., 2004). Nevertheless, the fact that both New Zealand and Western Australian wineries reported that the greatest numbers of wine tourists were from the 50 – 59 year age group while Tasmanian wineries stated that the majority of wine tourists were in the 30 - 39 year age group shows that there is the potential to not just focus promotional activities on older demographics, as clearly wine tourism has become more accepted within younger age

groups. This is important because, as Cohen and Ben-Nun (2009) point out, younger generations of consumers represent the future of wine tourism and purchase.

Wine tourist visitation

Given that the key facilitators of wine tourism were reported to be local tour operators and commercial wine tours across all three survey groups, it would appear that the social and educational nature of winery visitation is still valued by groups of consumers (Barber et al., 2008; Byrd et al., 2016; Carlsen & Boksperger, 2015; Getz, 2000; Gu, Qiu Zhang, King & Huang, 2018; Hall et al., 2000; Sparks, 2007). A point of interest though is that the 2015 New Zealand National Wineries Survey showed that New Zealand travel companies were placing less emphasis on wine tourism in terms of the package deals that they were offering – a trend which had also surfaced in the 2010 iteration of the survey. This is of concern as it is important that travel companies collaborate with the tourism related promotion of wineries, particularly as they represent an important source of international visitors. It has been noted that this decline could be due to smaller wineries within the New Zealand survey sample not having the ability to deal with larger groups of wine tourists. This points towards the need for further research in order to determine whether this disinterest in wine tourism from travel companies is related to winery size factors.

Visitor information collection

The lack of a systematic way of collecting visitor information across all three survey groups is a significant issue. Obtaining accurate records of visitor numbers is vital for wineries to be able to develop a suitable strategy for not only promoting their business but also attracting future visitors (Byrd et al, 2016; Dodd & Bigotte, 1995, 1997; Hussain et al., 2016; Molina et al., 2016; Szolnoki, 2018). These records also serve as a form of measurement to gauge exactly

how many wine tourists are repeat or first-time visitors (Byrd et al, 2016; Cullen et al., 2006; Dodd, 1995; Hashimoto & Telfer 2003; Maddern & Golledge, 1996; Szolnoki, 2018). The finding that wineries continue to have little systematic collection of visitor data, despite the well-established need (Mitchell & Hall, 2006) for more consumer research at the cellar door, represents a significant issue in the improvement of winegrower marketing strategies.

Reasons for winery visitation

Although buying wines and having the opportunity to sample wines at the cellar door were the most popular reasons for winery visitation, it is interesting to see that learning about wine and being able to have direct contact with the winemaker was also seen as valuable. This reinforces the long-held observation that personalised service and educational elements of the cellar door experience are crucial to a memorable wine tourism experience (Alonso et al., 2008; Bruwer, Prayag & Disegna, 2018; Bruwer et al., 2012; Marzo-Navarro & Pedra-Iglesias, 2009). Employing staff who exhibit high levels of product knowledge is important where direct contact with the winemaker was not possible. Word of mouth referrals by friends and family (Byrd, Canziani, Boles, Williamson & Sonmez, 2017; Jayawardena et al., 2008; Manno, Richards & Bruwer, 2016) also were played an important part in encouraging winery visitation.

8.10 Tourism and Marketing

Winery attitudes

The 2015 New Zealand survey saw that the once increasingly positive attitude reported by Christensen et al. (2004) in their 2003 New Zealand based survey towards the concept of wine tourism by New Zealand wineries appeared to be undergoing a renaissance. The 2010 New Zealand survey showed a decline in support for wine tourism from the 2003 figures (Baird, 2012). It was suggested that this was due to the high New Zealand dollar relative to overseas

currencies coupled with oversupply issues (Baird, 2012; Deliottes, 2010), and that this, in turn, had served to test the resilience of many New Zealand winegrowers. The capacity of New Zealand winegrowers to weather the storm of these challenges does appear to have declined however. The fact that in the 2015 survey there were 80 New Zealand respondents who replied that they had either exited the industry altogether or sold their business compared to the 22 wineries who reported this same phenomenon in the 2010 New Zealand survey (Baird, 2012) indicates just how serious the repercussions of this oversupply crisis within the New Zealand wine industry was. Wine tourists, however, appear to still represent a potentially lucrative market within the context of cellar door sales and creating brand awareness for the New Zealand wine industry. The 2015 New Zealand survey results show that an increasing number of wineries compared to 2010 view tourism as a means to attract a wide variety of visitors and also positively impact on the sales of wine exports.

Tasmanian and Western Australian wineries viewed wine tourists as not only being valuable, but also important for creating awareness of wineries through word of mouth. This stance also underlined that the Australian survey groups were actively attempting to use wine tourism to build long-term relationships with customers (Bruwer, Gross & Lee, 2016; Ferreira & Hunter, 2017; Thach & Cogan-Marie, 2018), and encouraging repeat visitation was of paramount importance. A finding indicated in research conducted in other Australian states (Alant & Bruwer, 2010).

Winery attributes

The differing levels of emphasis placed on the variety of experiential elements available by the wineries surveyed in this thesis showed that winery attributes still appeared to perform a key function in the decision of wine tourists to visit a particular destination (Getz, 1999; Santos, Ramos & Almeida, 2017; Williams, 2001a). Unsurprisingly, the quality of the wines on offer

rated highly across all three survey groups. The importance given to atmosphere, setting and location also supported the argument put forward by Williams (2001a) that the uniqueness of winery attributes aided in guiding the competitive positioning of these businesses within their chosen market. Western Australian wineries also supporting the notion that it was the overall winery experience which served as a major driver for visitation. The combination of multiple attributes being responsible for memorable wine tourism experiences at a destination is also well supported by numerous studies (Afonso et al., 2018; Alekabi et al., 2015; Charters & Ali-Knight, 2002; Cohen & Ben-Nun, 2009; Getz & Brown, 2006; Marzo-Navarro & Pedraja-Iglesias, 2012).

One aspect of the international comparative findings regarding winery attributes which goes against much of the extant literature concerning the educational aspect of winery visitation (Alonso et al., 2008; Bruwer, Prayag & Disegna, 2018; Bruwer et al., 2012; O'Neill, Palmer, & Charters 2002; Vlachvei & Notta, 2009), as well as much of the image associated with the promotion of wine tourism (Hall, 1998; Hall & Mitchell, 2008), was that being able to directly engage with the winemaker was not seen as being of great importance. However, having staff (and not necessarily the winemaker themselves) available at the cellar door who possessed product knowledge was noted by New Zealand survey participants as being important in terms of enabling a memorable wine tasting experience.

Regional attributes

The role which regional attributes play (Alant & Bruwer, 2010; Hall, 1998; Hall & Johnson, 1997; Jones, Singh & Hsiung, 2015; Schrieber, 2004; Thomas, Quintal & Phau, 2018) in terms of helping to promote wine tourism indicated that aside from the quality of the wines which were produced within a particular region that the prestige of a district was also important for Western Australian visitors. Being close in proximity to a major city or town (Bruwer, 2003; Getz & Brown, 2006; Jones et al., 2015) was cited as being important by Tasmanian wineries,

and shows that ease and accessibility cannot be underestimated in terms of their ability to influence the decision making of wine tourists when choosing exactly where they will visit (Axelson & Swan, 2012; Hall et al., 2000; Hall & Sharples, 2008; Poisson & Chen, 2010; Telfer, 2003). The increasing importance of festivals and events as a tool for creating awareness (Axelson & Swan, 2012; Fountain & Ryan, 2016; Hall & Sharples, 2008; Hashimoto & Telfer, 2008; Lee & Arcodia, 2011; Telfer, 2003) of not only regional wines, but also encouraging winery visitation amongst those who may have never considered doing so before, was noted by all survey groups.

Information sources

The consensus across all three survey groups that word of mouth was still the most important media form used by wineries to attract visitors reiterates the importance of providing a high quality service experience at the cellar door. However, the rising importance of social networks as a valuable medium for wine tourism promotion (Alonso, Bressan, O'Shea & Krajsic, 2013) cannot be underestimated, and this was demonstrated by the fact that Western Australian wineries viewed this as the third most important source behind visitor information. Visitor information sources, local or regional tourism organisations and mailing lists were still noted by New Zealand wineries as being valuable in terms of attracting visitors; what is clear from the survey findings though is that these same wineries must be prepared to engage with social networks in order to maximise the potential benefits of the opportunities presented through promoting wine tourism to the Generation Y and millennial market (Carlsen et al., 2006; Flores & Medeiros, 2016; Garibaldi et al., 2017; Fountain & Charters, 2010; Fountain & Lamb, 2011; Getz & Carlsen, 2008; Hussain, Simeon & Sayeed, 2016; Szolonki, 2018). Australian survey participants appear to have embraced this idea; New Zealand survey participants, however, are not so embracing of the value of online marketing as they listed websites as the least valuable source of information. What is unknown however is if this represents insights derived from

experience or is the result of the relatively low rates of innovation in the sector as previously discussed.

Another interesting finding was that Australian based survey participants stated that traditional information sources, such as Wine Australia and the Winemakers' Federation of Australia, were no longer considered to be valuable sources for tourism and marketing related information. The majority of information for these two groups was sourced via word of mouth or online communications, once again reinforcing the changing dynamic within the wine industry of moving away from seeking advice from industry bodies in favour of a less formal and more direct ways of sharing information amongst local winegrowers and winery owners. Word of mouth is still cited by both Manno et al. (2016) and Byrd et al. (2016) as being highly valued as a form of information dissemination amongst wine consumers. Szolnoki (2018) highlights the rising importance of social media for wineries to facilitate customer interactions; the shift noticed in the results of this study confirm that the traditional forms of communication are changing, and wineries must be prepared to adapt to these changes.

Winery attitudes towards tourism

Differences in terms of attitudes towards tourism yielded some interesting findings. The fact that the majority of Western Australian and Tasmanian wineries surveyed held the viewpoint that they were happy with the amount of wine that cellar visitors brought ran counter to the opinion held by their New Zealand contemporaries. Having stated this however, the New Zealand result obtained in the 2015 survey for this statement had risen from the 2010 figure which is noted as being the lowest percentage figure recorded across the New Zealand longitudinal time series. This would appear to suggest that the value of cellar door sales as an important revenue stream derived from wine tourism is slowly gaining more recognition within the New Zealand wine industry.

Tourism was noted as being valuable to all three survey groups; however, Australian survey participants were slightly more vocal in their support of this statement than their New Zealand counterparts, with Western Australian wineries strongly supporting the belief that wine tourism was responsible for attracting a wider range of customers to their vineyards. The New Zealand result in the 2015 survey had also shown an increase on the results from the 2010 survey; however, there did appear to be some discontent from New Zealand wineries regarding the significance of marketing opportunities which wine tourism offered. Tasmanian wineries also were much more reticent to claim support of this statement as well, while it appeared that Western Australian wineries had recognised the value of marketing to wine tourists. One area that Tasmanian wineries did see as having been positively impacted by tourism was their ability to sell wine offshore, which underlines the importance of wine tourism for creating brand awareness for what may have been previously unknown wineries (Azzurro, Richards & Bruwer, 2017; Hall & Prayag, 2017; Lockshin, Saliba & Hirche, 2015). In contrast both Western Australian and New Zealand survey participants showed little support for tourism's value for increasing wine sales in international markets.

Given that the result in the 2015 survey regarding the value of the revenue stream which tourism provides for New Zealand wineries was more than twice that of their Australian counterparts, it is of interest to see that Tasmanian and Western Australian wineries were more supportive of the fact that they felt that the positive benefits of tourism outweighed the negative benefits. When considering this statement New Zealand recorded the lowest result of the three groups surveyed; discovering exactly what these negative aspects are which New Zealand wineries perceive to be specific to wine tourism marks an important area for future research. Despite the disparity in attitudes shown towards the benefits of wine tourism, there was consensus between all survey groups when the statement was posed as to whether tourism attracted the kind of visitors that wineries wanted onsite. Overall the results obtained through

this series of tourism-related statements indicates that the full potential offered by wine tourism to both the New Zealand and Australian wine industries still remains somewhat unrealised, suggesting that a more concerted effort at communicating and researching these benefits could be worthwhile. Key recommendations in this area is for all three survey groups would be greater investment be made by sustainable winegrowing programmes in terms of educating wineries on the potential benefits that wine tourism can offer, and also ensuring that promotion of wine tourism is directed at the appropriate media channels used by the variety of target markets that wine tourism now caters towards.

8.10.2 Tourism and regional promotion

The regional promotion of wine tourism was an aspect which proved to be one of the most contentious across the comparative dimension of this thesis. Both Western Australian and Tasmanian survey participants disagreeing with the majority of statements posed regarding the ability of regional tourism to bring more visitors to their wineries. New Zealand wineries, although appearing to be more accommodating of the efforts made towards regional tourism promotion, were still less than enthusiastic when considering the overall success of these efforts that were being made. Overall these results and the general dissatisfaction which appears to exist across the three survey groups towards the performance of their local tourism governing bodies in promoting wine tourism could suggest that such promotions are possibly using the wrong forms of media to target potential wine tourists.

8.11 Chapter Summary

This chapter has discussed the findings of this thesis in relation to the existing body of literature on sustainable winegrowing and wine tourism. The issue of mandatory versus voluntary membership of sustainable winegrowing programmes was shown to be a key reason why New Zealand winegrowers were becoming increasingly disenfranchised with the SWNZ scheme. It was also found that Australian and New Zealand wineries held differing perspectives on many important issues, including the areas of climate change, biosecurity, migrant workers' rights and governance. Further to these issues were distinct differences in viewpoints surrounding marketing initiatives such as eco-labelling, and the benefits of sustainability in terms of providing a competitive point of difference. Other contentious issues included wine tourism promotion and the educational aspects surrounding winery visitation. However, consensus across the three survey groups was reached in areas such as the reduction of energy emissions and the promotion of wine tourism towards younger markets such as millennial wine drinkers. This thesis will now move to detail the conclusions that were reached in this research in Chapter 9.

Chapter 9

Conclusion

9.1 Chapter introduction

This final chapter begins by providing a summary of what has been covered in this thesis before showing how this research has responded to each of the six objectives (see Chapter 1) that guided this study. This will demonstrate where the key contributions of this work lie in relation to the existing literature, along with emphasising the value of this research. Also included is a reflection on the limitations of the research undertaken in this study, along with some of the suggested directions for future research within sustainable winegrowing practices and wine tourism based on the research gaps that were revealed in the discussion (see Chapter 8). The chapter concludes by offering some opinions on the future of sustainable winegrowing practices and wine tourism within the context of the cool climate winegrowing regions of New Zealand, Tasmania and Western Australia.

9.2 Summary of the research undertaken

The introductory chapter provided an overview for both the context of this thesis and the value that this study contributes to the existing body of research into wine tourism and sustainable winegrowing practices. The reasons for conducting both a longitudinal time series study and an international comparative study were outlined, and the key concepts involved in this thesis such as cool climate winegrowing, wine tourism and sustainability were defined. The fact that New Zealand, Tasmanian and Western Australian wineries are all in the business of both

tourism and wine production set the scene for discovering how representative the current situation in each of these regions was of the global wine market in terms of supply-side attitudes towards sustainability and wine tourism. A discussion of the aims of this research led to the formulation of the six core research questions that provided the foci of this thesis. These were outlined before a review of international and New Zealand based sustainability and wine tourism research was undertaken.

Chapter 2 examined the extant literature on sustainability and wine tourism from an international perspective. From this review it was clear that the association of wine tourism with sustainable winegrowing practices offered multiple opportunities for customer engagement and business growth; the recognition of both the cellar door and wine festivals as marketing tools in terms of onsite and post-visit consumer behaviour illustrated this. Capturing these opportunities was shown to not only enable wineries to expand beyond their existing market and into younger demographics (and thereby the development future generations of wine tourists), but also to encourage innovation and knowledge sharing amongst existing wine industry networks. As the literature demonstrates, there are areas where a significant research gap currently exists. The most notable of these is perhaps with respect to research into social justice issues in terms of sustainable winegrowing practices. The treatment of migrant workers is an important area of study within the global wine industry due to the fact that migrants provide the backbone of labour in many regions (such as the Napa Valley) and are increasingly important in New Zealand. Issues that were identified as requiring further exploration were presented in terms of the challenges that direct contact with wine tourists creates as, whilst this has been well studied in terms of service and tourist experiences, this is also an area of particular concern for biosecurity management.

The focus of Chapter 3 was on New Zealand based wine tourism research, and the chapter noted that a number of significant knowledge gaps existed. Being able to define the core

destination attributes that wine tourists associate with memorable winery experiences was a strong theme that emerged, which highlighted the potential for New Zealand wineries to add value to their business strategies employed to engage wine tourists. Other opportunities where research was clearly needed involved ascertaining the motivating factors for winery visitation by surveying wine tourists at the cellar door. The importance of further research within the areas of sustainability, biosecurity and innovation, and the relationship of wine tourism to each of these three areas, was also pointed out as being critical in order to capture changes in perceptions towards these issues. The level of wine tourism promotion which individual regions commit to is an important facet for driving the demand for winery visitation within the New Zealand wine industry. Although the 2015 iteration of the New Zealand National Winery Survey aimed to provide a snapshot of the New Zealand wine industry, it also served to add depth to the existing survey time series by way of allowing for longitudinal comparisons to occur.

Chapter 4 outlined the methodology which was used in this study. Although a number of questions asked in previous wine tourism surveys have been retained, new questions were asked with respect to sustainability, and country-specific questions were altered in order to address regional differences as required to take into account the differences in the governance of wine tourism and sustainable winegrowing. To the author's knowledge this is the first New Zealand or international study to provide such an extensive longitudinal analysis of wine tourism at both a national and an international scale as well as attempt to provide an international comparison between regions, which provides a valuable contribution to the existing body of knowledge in this area.

The content analysis undertaken within Chapter 5 represented the first time that this method had been applied to a systematic search of international sustainable winegrowing websites. The

findings derived from the 53 international sustainable winegrowing programmes that were analysed revealed that there were definite gaps with respect to the adoption of sustainable winegrowing practices at the industry level. The particular areas of concern that this content analysis highlighted as being unevenly applied in programmes existed in the areas of branding, biosecurity and the treatment of migrant workers. Also noted was a reluctance on behalf of some of the sustainable winegrowing programmes towards communicating the existence of their programmes via the use of sustainability seals and branding, which was not expected.

The content analysis did reveal several commonalities which served as strong points when considering sustainable winegrowing programmes from a global perspective. Environmental issues which were strongly supported by the majority of programmes included water, waste and soil management, while climate change and biodiversity were also seen as important areas. Social justice issues that were noted as having a strong representation included being focused on the community, and the areas of education and outreach, health and safety, and training. These issues were examined further within the survey component of this thesis, and served to directly inform the new questions that were added to previous survey templates. These questions provided the foundation used to identify the perceptions that existed amongst cool climate winegrowers towards sustainable winegrowing programmes.

The findings presented in Chapter 6 revealed that there were many significant insights into New Zealand wine tourism and winegrower perceptions towards sustainable practices. Biosecurity and sustainability issues showed some interesting results; the latter especially highlighted that some problems exist in the New Zealand wine industry in terms of perceptions concerning the treatment of migrant workers (Skerrett, 2019). Another point of note is that wineries did not appear to see the value in sustainable business practices; whether this is in part due to the mandatory nature of the SWNZ scheme, as some participants have suggested in their comments, should definitely be a cause for concern given current policy settings in the sector.

However, the 2015 New Zealand survey results did point toward some changes within the industry. One of the notable changes is that New Zealand wineries appear to be slowly beginning to realise the value of innovative business strategies in order to remain viable. However, being able to see tangible benefits from new or improved business practices appears vital in gaining widespread acceptance of change within the New Zealand wine industry as there appears to be an element of risk aversion amongst winegrowers.

The results from the Tasmanian and Western Australian wineries alongside the comparative analysis with their New Zealand based counterparts presented in Chapter 7 showed that there are many different beliefs in terms of the value placed upon tourism and sustainable practices between the three survey groups. Of particular concern was the lack of value that Western Australian wineries appear to place on biosecurity, which also mirrors the perceptions of New Zealand wineries within this topic area. Differing perceptions were also shown to exist between Australian and New Zealand wine producers when considering the treatment of migrant workers; New Zealand wine producers appeared dismissive of the importance of this issue, whereas Australian wine producers thought the wellbeing of workers was of great importance. Throughout the results presented in this chapter it was pertinent to note how attitudes towards sustainable practices changed depending on whether wineries were forced into a situation whereby the schemes were of a mandatory nature (such as the SWNZ scheme) or voluntary (such as the nationwide Australian Entwine programme or the VinØ sustainable winegrowing programme in Tasmania). This reflects the importance of governance and regulatory requirements in shaping how sustainable winegrowing is constructed in different jurisdictions.

Chapter 8 demonstrated the contribution and value that this thesis has in relation to the existing body of literature within sustainable winegrowing and wine tourism. The key focus of this

chapter was on the insights that can be drawn from the research, and the implications that this thesis has for understanding sustainability in both the wine tourism and sustainable winegrowing context. The issue of mandatory versus voluntary membership of sustainable winegrowing programmes was shown to be problematic for New Zealand wineries in terms of their relationship with the SWNZ scheme. It was also found that Australian and New Zealand wineries held differing perspectives within the areas of climate change, biosecurity, migrant workers' rights and governance. Differing viewpoints also existed surrounding marketing initiatives such as eco-labelling, and the benefits of sustainability in terms of providing competitive advantage. The promotion of wine tourism and the educational aspects surrounding winery visitation were also noted as contentious topics. However, agreement across the three survey groups was reached in areas such as the reduction of energy emissions and the promotion of wine tourism towards younger markets such as millennial wine drinkers.

This summary of the chapters contained within this thesis will now focus on the research conclusions.

9.3 Research Conclusions

The six core research questions which provided the foci for this thesis will now be reviewed in the light of the results of this thesis.

Research Question 1: Does the content analysis of international sustainable winegrowing programmes indicate that changes in governance and regulatory measures within the wine industry are influencing cool climate wine producers to adopt sustainable wine production practices?

The content analysis undertaken in this thesis revealed that changes to governance and regulatory measures within the wine industry were influencing cool climate wine producers' adoption of some sustainable wine production practices. Environmental issues that were

strongly supported by the 53 programmes analysed included water, waste and soil management, while climate change and biodiversity were also seen as important areas. The representation of social justice issues was also strong, and included being focused on the community, the areas of education and outreach, health and safety and training. However, the areas this content analysis indicated as being problematic in terms of the lack of widespread adoption by programmes were branding, biosecurity and the treatment of migrant workers. These results may reflect political and geographical differences, but clearly remain important for understanding the relative foci of sustainability programmes and represent a potentially significant area of future research.

Research Question 2: Are cool climate wineries that engage in sustainable wine production practices more innovative than those who do not?

It appeared that for cool climate wineries engagement in sustainable winegrowing techniques was not an automatic guarantee that innovation was taking place. In New Zealand the pattern of risk aversion that was first noticed in the 2010 National Wineries Survey remained in the 2015 survey iteration. Wineries were only slightly more innovative than they had been in the previous survey; risk aversion still appeared to be present, and New Zealand wineries wanted to see a proven track record of success before adopting new viticultural techniques or processes. Western Australian wineries were found to be the most open to innovation, but even then, an air of caution still existed. For these wineries, size was found to be a significant factor in terms of the level of employee training that was able to be undertake along with the amount of time that the wineries concerned were able to spend acquiring knowledge from others.

Research Question 3: Do cool climate wineries that engage in sustainable wine production practices value the importance of social justice issues which affect their workers?

This study found that the area of migrant workers' rights was where there were very different opinions between Australian and New Zealand wineries. Wineries in both Tasmania and Western Australia saw social justice issues as being very important, while their New Zealand counterparts remained somewhat ambivalent towards this issue. Given that the New Zealand wine industry has recently encountered significant problems with the exploitation of migrant winery workers (Radio New Zealand, 2019a, b; Skerritt, 2019) this is very concerning, hence the need for further research in this area.

Research Question 4: Do cool climate wineries that engage in sustainable wine production practices view eco-labelling as important in terms of differentiating their wine products from other existing market offerings?

Australian cool climate wine producers in this study valued eco-labelling their wines, while their New Zealand contemporaries remained unconvinced in eco-labelling as a promotional device. This suggests that, from a New Zealand perspective, despite substantial international positioning of New Zealand wines as sustainable and consistent with the 100% Pure brand (New Zealand Winegrowers, 2018c), SWNZ needs to better communicate the importance of eco-labels for the end consumer (Barber et al., 2009; Barber et al, 2010; Delmas & Grant, 2014; Delmas & Lessem, 2017; Forbes et al., 2009; Schäufole & Hamm, 2017; Zucca et al., 2009) to businesses within the New Zealand wine industry.

Research Question 5: Do cool climate wineries that engage in sustainable wine production practices have an adaptive or mitigative approach towards dealing with the effects of climate change?

In the case of the Australian wineries that took part in this study an adaptive approach was found, and Western Australian wineries in particular appeared to be leading the way across all three survey groups when it came to awareness of the seriousness of climate change issues for wine producers. New Zealand wineries could be described as having a reactive approach towards the effects of climate change. This does not bode well for the future prospects of the New Zealand wine industry as a whole with rising temperatures (Galbreath, 2015) having the potential to seriously affect cool climate growing conditions which many varieties rely on (Jackson & Schuster, 1987).

Research Question 6: Are cool climate wineries that engage in sustainable wine production practices doing so in order to enhance their relationships with consumers and wine tourists?

No evidence was found within this study to indicate that sustainable wine production practices were perceived by wineries as an important tool for cool climate winegrowers to attract wine tourists or increase consumer demand for their product. This was even though eco-labelling was regarded as significant by some winegrowers. There appears to be a lack of communication between wineries and the governing bodies in charge of the sustainable winegrowing programmes that they are members of. Attempting to bridge this disconnect highlights the need for education within the wine industry regarding exactly what constitutes the operational definitions associated with sustainable production practices. As the result of the comparative survey results indicate, wineries appear to have differing ideas with respect to what constitutes the core concepts that underpin sustainability.

9.4 Limitations

The main limitation experienced while undertaking this research was the high turnover of wineries that was found to have been occurring within the Australian and New Zealand wine industries. This was evidenced by the number of wineries who were listed in the *2015 Australian and New Zealand Wineries Directory* (Winetitles, 2015) which was used as the database for this study (refer to Chapter 4). The high number of wineries who received surveys and responded that they were no longer at that address or had gone out of business demonstrates that the Australian and New Zealand wine industries are both dynamic and changing at a fast pace. This high rate of turnover has not been readily acknowledged in previous research, and may reflect the census based approach of the present study. Although, as noted in the thesis in Chapter 4, whilst this study has a higher rate of return and a larger sample size than New Zealand Winegrowers' own business surveys (New Zealand Winegrowers 2018c, 2018e), issues of the representativeness of the industry at a given time remain. The high rate of turnover of winegrowers also has potential implications for future research and determining the accuracy of the results of future studies. There appears to be a very significant turnover of winegrowers in the industry that is not being reflected in official industry data which is significant for sampling strategies.

Another limitation which needs to be noted is that when considering the content analysis (Chapter 5) the fact that a topic is not covered online doesn't mean that it is not offered by the programme concerned. This could be because of a lack of information provided by the website concerned, or down to the fact that the website itself is out of date.

9.5 Directions for future research

This thesis has found that there is still much to be learnt regarding what motivates the adoption of sustainable winegrowing practices. Opportunities for further research exist that could help

inform the business strategies of cool climate wineries in order to help increase revenue from sustainable practices and activities related to wine tourism.

Within the context of wine tourism and marketing, opportunities exist for further cellar door studies that build on prior research in this area (Cohen & Ben-Nun, 2009; Cradock-Henry & Fountain, 2019; Crick & Crick, 2015; Forbes & Kennedy, 2016; Fountain, 2018; Getz & Brown 2006; Mitchell & Hall, 2006; Thompson & Fountain, 2017) that help to define the characteristics of visitors and their motivations for winery visitation. In particular, although winegrower understandings of the value of tourism have been well identified and discussed, including from this thesis, there is relatively little knowledge of tourism and travel business perceptions of how they perceive wine tourism and winegrowers. This is potentially a significant issue as New Zealand travel companies, along with their Australian counterparts, need to be engaged in collaborative arrangements with wineries in order to sustain the growth of wine tourism as well as secure value for the wine industry and themselves.

Another significant research gap indicated by this study in terms of the wine tourism context is in the areas of biosecurity and sustainability. Although the environmental dimensions of both these areas are critical to the viticultural resource base of wine tourism, there is little direct research on the environmental dimensions of wine tourism itself. This is particularly pertinent in the case of biosecurity-related studies where there is only very limited previous research (Baird, 2012; Christensen et al., 2004; Hall, 2003b, 2005b), even though biosecurity is a focus of border protection activities for agriculture, including the wine industry (New Zealand Winegrowers, 2018d).

A research gap is also recognised with respect to migrant workers' rights in the wine industry. This would allow for further examination of the differing perceptions towards migrant workers despite their key role at harvest time, as evidenced in this study with the polarity within the results in this area between Australian and New Zealand wineries.

Studies are also required which centre on how information is shared between wineries and governing bodies, which may be especially significant for the development and adoption of innovative practices. This study has recognised that there was a gap in this area in terms of communication between wineries and industry bodies. Future research could study which communication practices are most effective in conveying information as well as the broader context of knowledge sharing within and between sectors.

Finally, in addition to pursuing new lines of inquiry, the present thesis adopted both a longitudinal and comparative approach to studying winegrowing and wine tourism practices in New Zealand. By including questions utilised in previous iterations of the national wine survey this research has provided an almost 20 year account of wine tourism in New Zealand, something which is rare in tourism research outside of national tourism surveys. It is to be hoped that such research will be continued in the future.

9.6 Conclusion

Although wine tourism is an important component of winegrower's business strategies that provides opportunities for both short-term (cellar door) and long-term (retail) sales (Hall & Mitchell, 2008), a disconnect appears to exist between winery sustainability practices and the involvement of winegrowers in tourism across the three survey groups. For New Zealand winegrowers this result reinforces previous research that found that the innovative practices of New Zealand winegrowers that are engaged with cellar door sales are related to marketing – which itself appears tied to the attraction of the wine tourist market segment – rather than sustainability (Deloitte, 2010). New Zealand winery sustainability practices are instead being driven by a top-down approach by the export focused national body, rather than by tourism or even what wineries themselves may want to focus on with respect to sustainability and the environment. Yet, as survey results and comments from respondents demonstrate, there is often substantial divergence between the interests and perspectives of winegrowers and national level

initiatives, which may lead, in some cases, to substantial resentment of such initiatives, especially if the sustainability practices that winegrowers have to adopt to be part of SWNZ are not seen as providing an economic return. For some New Zealand wineries, the mandatory nature of this program for export support and the costs involved to be a member appears prohibitive. As such, there appears to be a group of wineries who regard themselves as penalised in terms of export potential purely by the sustainability indicators of the SWNZ programme rather than their preferred strategies.

It is possible that the adoption of sustainability practices, as with the significance of wine tourism in business practices may be a function of stage in its life course and/or the extent to which they are family-owned firms (Jones, Singh & Hsiung, 2015; Stewart et al., 2008). However, there appeared no firm statistical support for that observation in the present study. Furthermore, the study also raises some fundamental questions about the sustainability practices of winegrowers and their comparability to other rural businesses and poses significant questions as to what actually constitutes a tourism business, given that tourism does not have a standard industry classification. For example, the business models and innovation profiles of many rural firms are considerably different from that of wineries engaged in wine tourism, with wineries far more focused on sustainability and reducing energy consumption (Deloitte, 2010) than those in the New Zealand accommodation and restaurant sector (Deloitte, 2017), or even other tourism attractions (Ministry of Business, Innovation and Employment [MBIE], 2018). The understanding of rural tourism business sustainability practices, including winegrowers, therefore potentially needs to be grounded in the awareness of broader sectoral demands on firms and constraints with respect to business strategy, rather than just 'tourism'. In the specific case of winegrowers, the partially-industrialised nature of tourism activities means that only a proportion of a business' customer base or income is derived from tourism and, as a result, any analysis of sustainability practices or other aspects of firm strategy and management require

separating out the role of tourism in business decision-making as well as the relative mix between tourism and non-tourism influences in the strategy setting.

Critically, the tourism and sustainability practices of cool climate wineries and the national programme to which they often have to belong to is geared towards practices within a specific site and, like many assessments of the sustainability of a firm or location, fails to adequately account for the impacts of visitor mobility on the footprint of the business. This problem exists whether it be considering the biosecurity risks posed to winegrowers by tourists on their way into the winery concerned, the environmental costs of transporting wine to international consumers, the economic benefits to businesses and regions, or how researchers conceptualise tourism firms in rural or other areas.

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Appendices

Appendix A: 2015 New Zealand Wineries Survey

Appendix B: 2016 Tasmanian Wineries Survey

Appendix C: 2016 Western Australian Wineries Survey

Appendix D: 2003 New Zealand Wineries Survey

Appendix E: 2010 New Zealand Wineries Survey

Appendix F: Cover letter for the 2015 New Zealand survey

Appendix G: Cover letter for the 2016 Tasmanian survey

Appendix H: Cover letter for the 2016 Western Australian survey

Appendix I: Ethics Approval Letter for this thesis

Appendices J –M Publications derived from this thesis (refer to Table of contents for details)

Appendix N: Thesis Declaration

Appendix A: New Zealand Wineries Sustainability Survey 2015

WINERY PROFILE

1. Winery Location

In which winery region are you located? *(Please tick ONE)*

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> Auckland | <input type="checkbox"/> Matakana | <input type="checkbox"/> Bay of Plenty | <input type="checkbox"/> Central Otago |
| <input type="checkbox"/> Gisborne | <input type="checkbox"/> Hawke's Bay | <input type="checkbox"/> Marlborough | <input type="checkbox"/> Nelson |
| <input type="checkbox"/> Northland | <input type="checkbox"/> Waiheke Island | <input type="checkbox"/> Waikato | |
| <input type="checkbox"/> Wairarapa | <input type="checkbox"/> Waipara | <input type="checkbox"/> Canterbury (non-Waipara) | |
| <input type="checkbox"/> Other <i>(Please specify)</i> _____ | | | |

2. Winery Age

When were grapes first planted in your vineyard? Year _____

When was the first commercial release of your wine? Year _____

When was your winery first opened to visitors? Year _____

3. Employees

Please indicate the total number of full-time, part time and casual workers employed by your winery over the most recent tax year. Please include yourself in these figures.

Fulltime _____ Part-time _____ Casual _____

4. Annual wine Production

Please indicate your total annual wine production in units of litres. _____ litres.

5. Is your wine made on site? *(Please tick)*

Yes

No If no, please state where you have your wine made.

6. How would you describe the ownership status of your winery? (Please tick ONE)

Sole proprietor Public company Partnership Trust Private company

Other (Please specify) _____

7. Turnover

Please indicate the TOTAL amount received from the sale of all products and services at your winery over the 2014 tax year (1 April 2014 – 31 March 2015). Please include sales of wine, food, accommodation and other products and services offered at your winery. Please note the answers will be kept *strictly confidential* and will be amalgamated and used for statistical purposes only.

(Please tick ONE)

Less than \$50 000 \$50 - \$99 999 \$100 - \$249 999 \$250 - \$499 999

\$500 - \$750 000 Over \$750 000 Prefer not to state

8. All Sales

What proportion of your winery's total income falls into the following categories? (Please estimate)

Cellar door wine sales _____% Mail order wine sales _____% Other domestic wine sales _____%

Export wine sales _____% Accommodation _____% Other products and services _____%

9. Now thinking about the "Other domestic wine sales" only

What proportion of your domestic wine sales fall into the following categories? (Please estimate)

Specialist wine stores _____% Supermarkets _____% Wine clubs _____%

Restaurants _____% Farmers markets _____%

Other outlets (Please specify) _____

10. Cellar door sales

Do you offer cellar door sales?

Extre-	Some	Not	Not at	Don't	
mely	Very	what	very	all	know

Yes ← If yes, how important are they to your business?

No ← If no, are you intending to offer cellar door sales in the future? Yes No

11. Tasting fees

Do you charge tasting fees? Yes (*Please answer Question 11a*) No (*if no, continue to Question 12*)

11.a. If yes, do you refund on purchase?

No

Yes, the full amount

Yes, a partial amount (*Please specify*) _____

12. Local sales

Apart from cellar door sales, are your wines available locally? Yes No

If yes, where?

Cafés or restaurants

Pubs, taverns or wine bars

Supermarkets

Specialist wine stores

Accommodation

Other (*Please specify*) _____

13. Products, services and facilities

What types of products and services do you offer visitors to your winery? (*Please tick ALL that apply*)

A. Products

Company branded merchandise

Promotional material

Regional merchandise

Company branded promotional material

Regional promotional material

Other wine merchandise (*Please specify*) _____

B. Services and Food

Winery tours

Vineyard tours

Wine tasting

Tasting or snack food

Host functions

Host conferences

Restaurant

Accommodation

- Events / festivals Entertainment Other services or food services

C. Facilities

- Wine cave Barrel hall Winemaking demonstrations
 Historical displays Conference facilities Children's playground
 BBQ area Picnic or entertainment area Other facilities *(Please specify)* _____

D. Services for people who have disabilities

Wheelchair access to ⇐ Tasting room Winery Vineyard

Restaurant/wine bar

Toilets

Services for people who have visual or hearing impairments Yes, *(Please specify)* _____

No

Other services for people who have disabilities *(Please specify)* _____

VISITOR PROFILE

For Questions 14 through 16 please indicate the estimated proportion of your visitors who you think would fit into each of these categories. For these questions your best estimate is sufficient.

14. Age

What proportion of your visitors fall into the following age groups?

Under 18 years _____ % 18-29 years _____ % 30-39 years _____ % 40-49 years _____ %
50-59 years _____ % 60 + years _____ %

15. Gender

What proportion of your visitors are male and what proportion are female?

Male _____% Female _____%

16. Visitor Origin

What proportion of your visitors are from New Zealand and what proportion are from overseas?

New Zealand Visitors _____% Overseas Visitors _____%

17. Wine Tourism Groups

Does your vineyard form part of any commercial wine tour? Yes No

If yes, what types of tours visit your vineyard? (Please tick)

Self-guided tours Local tour operator(s) Travel company(s)

18. Visitor Information Collection

How do you collect information about the number of people visiting your winery? *(Please tick as many as applicable)*

No systematic way of collecting the information Till receipts

Mailing list

Counters (Please specify) _____

Surveys

Other (Please specify) _____

19. Reasons for visit

What do you consider to be the main reason visitors come to your winery? (Please tick as many as applicable)

Buying wines

Tasting wines

Learning about wines

Winery tour

Meeting the wine maker

Organic wines

Socialising

Picnic or BBQ

A day out

Relaxation

Festivals or events

20. Visitor attributes

How would you describe the majority of visitors to your winery? (Please give a percentage estimate in the box provided. The sum total of ALL percentages must add up to 100%)

Wine lovers... with advanced knowledge of wine _____%

Wine interested... with intermediate knowledge of wine _____%

Wine curious... with basic or no knowledge of wine _____%

21. Visitor Information

Do you believe that information on visitor numbers and characteristics would be, or is useful to your business operation? (Please circle) **Strongly** **Agree** **Unsure** **Disagree** **Strongly**

Agree

Disagree

SUSTAINABILITY

22. Is your winery currently an accredited member of Sustainable Wineries New Zealand (SWNZ)?

Yes

No

23. Please describe the level of commitment that your winery has towards sustainability (Please select one option)

- Not interested in adopting sustainable practices (If not, please go to Question 33)
- Interested in adopting sustainable practices
- Planning to adopt sustainable practices but not ready yet
- Have already adopted sustainable practices

24. Which of the following statements best defines how your organisation defines sustainability?

(Please rate on a scale of 1 to 5, where 1 is “No impact” and 5 is “Major impact”)

	Rating
Sustainability refers to climate change issues	
Sustainability refers to other environmental issues	
Sustainability refers to corporate social responsibility issues	
Sustainability refers to maintaining the viability of our business	
Sustainability incorporates climate change, environmental, social and economic issues	
Sustainability refers to meeting the needs of the current generation without compromising the ability of future generations to meet their needs	
Sustainability refers to biodiversity issues	
Sustainability refers to social justice issues	
Sustainability refers to addressing issues from a long-term perspective	

25. Has your winery developed a clear business case for addressing sustainability?

- Yes No Unsure Have tried, but it was too difficult to develop and continue

26. Please rate the potential impact of the following sustainability practices for your winery. (Please

rate on a scale of 1 to 5, where 1 is “Not important”, 3 is “Important” and 5 is “Extremely important”)

	Rating
Stronger brand and greater pricing power	
Employee recruitment, morale and retention	
Greater operational efficiency	
Improved customer loyalty	
Enhanced ability to enter new markets (e.g. exports)	

30. During the last two financial years what were the reasons that your winery chose to employ sustainability practices? *(Please tick as many as applicable)*

- To increase revenue To reduce energy consumption To improve productivity
- To reduce costs To reduce environmental impact To increase market share
- To attract visitors to our winery To establish/exploit new market opportunities
- Other *(Please specify)* _____

31. How does your winery currently receive information regarding sustainable winegrowing practices? *(Please tick as many as applicable)*

- Newsletters Meetings Emails
- Onsite winery visits from sustainable winegrowing programme representatives
- Other *(Please specify)* _____

32. Are you satisfied with the current level of information that you receive from your local sustainable winegrowing program?

- Yes No

32.a Who do you feel should be primarily responsible for **PROMOTING** sustainable winegrowing practices in your region? *(Please rank in order of importance, 1= MOST IMPORTANT)*

Public sector _____ Private sector _____ Public/Private sector partnerships _____

Other *(please specify)* _____

33. Biosecurity

Does your vineyard currently have biosecurity measures in place with respect to wine tourists?

- Yes No

ENVIRONMENTAL INNOVATION AND YOUR WINERY

For the purpose of this survey innovation is broadly defined. It includes the development or introduction of any new or significantly improved activity for your winery. This includes products, processes and methods that the winery was first to develop and those that have been adopted from other organisations.

39a. During the last two financial years did you winery introduce on to the market any new or significantly improved goods or services?

(Don't include the selling of new goods or services wholly produced and developed by other businesses)

Yes (Please answer Question 39b) No (if no, continue to Question 40a)

39b. Were any of these new or significantly improved goods or services *(Please select ALL that apply)*

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

39c. For the last financial year please select the ONE option that best estimates the percentage of sales for this winery that came from those new or significantly improved goods or services.

- Zero
- 10% or less
- 20% or less
- 30% or less
- 40% or less
- 41% - 100%
- Don't Know

40a. During the last two financial years did you winery introduce on to the market any new or significantly improved operational processes? (i.e. methods of producing or distributing goods or services)

Yes (please answer Question 40b) No (if no, continue to Question 41a)

40b. Were any of these new or significantly improved operational processes: (Please select ALL that apply)

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

41a. During the last two financial years did you winery introduce on to the market any new or significantly improved organisational/managerial processes? (i.e. significant changes in your winery's strategies, structures or routines)?

Yes (please answer Question 41b) No (if no, continue to Question 42a)

41b. Were any of these new or significantly improved organisational/managerial processes: *(Please select ALL that apply)*

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

42a. During the last two financial years did you winery introduce on to the market any new or significantly improved sales or marketing methods which were intended to either increase the appeal of goods or services for specific market segments or to gain entry to new markets?

- Yes *(Please answer Question 42b)* No *(if no, continue to Question 43)*

42b. Were any of these new or significantly improved sales or marketing methods: *(Please select ALL that apply)*

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

43. Reasons for innovation

During the last two financial years what were the reasons that your winery tried to innovate?

(Please tick)

	Yes	No	Don't know
To improve productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To increase productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To increase responsiveness to customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To increase market share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To establish/exploit new market opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To improve work safety standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce energy consumption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce environmental impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To replace goods and services being phased out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

44. Sources of ideas or information for innovation

During the last two financial years did this winery find any of the following important as a source of ideas or information for innovation? *(Please tick)*

	Yes	No	Don't Know
New staff (those appointed in the last two years)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Existing staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other businesses within the business group (e.g. subsidiaries or parent companies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitors and other businesses from the same industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business from other industries (not including customers or suppliers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Professional advisors, consultants, banks or accountants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Books, journals, patent disclosures or the Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wine shows, festivals or conferences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industry or employer organisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Universities or polytechnics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crown Research institutes, other research institutes or research associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Government agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

45. Activities to support innovation

During the last two financial years did your winery do any of the following: *(Please tick)*

	Done to support innovation	Done, though not to support innovation	Not done	Don't know
Introduce a new variety of grape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Use new viticultural techniques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Acquire new machinery and equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Acquire new computer hardware and software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Acquire other knowledge (e.g. outsourcing for new viticultural techniques or other intellectual property)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Implement organisational restructuring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Design (e.g. graphic design on labelling of bottles)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Market the introduction of new goods and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			

Market research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>		
Make significant changes to existing market strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>		
Employee training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>		

CO-OPERATIVE ARRANGEMENTS

In the following questions co-operative arrangements mean actively participating with another organisation or individual in activities for the purpose of innovation.

46. During the last two financial years did this business have any co-operative arrangements for the purpose of innovation?

- Yes (please answer Question 47) No (if no, continue to Question 50)

47. During the last two financial years with what types of businesses or institutions did this business have those co-operative arrangements? (Please tick)

	NZ	Overseas	No co-operation
Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Businesses from other industries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitors and other businesses from the same industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other business from within the business group (e.g. subsidiaries and parent companies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Universities or polytechnics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crown Research institutes, other research institutes or research associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

48. During the last two financial years in which activities did this business engage in co-operative arrangements as defined at the start of this section? (Please tick as many as applicable)

- Joint marketing or distribution Joint R & D Joint training
 Joint production Joint prototype development Other

49. During the last two financial years for what reasons did this business engage in co-operative arrangements as defined at the start of this section? (Please tick as many as applicable)

- | | |
|--|--|
| <input type="checkbox"/> Sharing costs | <input type="checkbox"/> Access to work practices |
| <input type="checkbox"/> Spreading risk | <input type="checkbox"/> Access to financial resources |
| <input type="checkbox"/> Access to R & D | <input type="checkbox"/> Access to new markets |
| <input type="checkbox"/> Access to production processes | <input type="checkbox"/> Access to new suppliers |
| <input type="checkbox"/> Access to management skills | <input type="checkbox"/> Other |
| <input type="checkbox"/> Access to new distribution channels | |

TOURISM AND MARKETING

50. Wine and Food Festivals

What, if any, wine and food festivals did you participate in over the 2014 tax year (1 April 2014 -31 March 2015) *(Please tick as many as is appropriate)*

- | | |
|---|--|
| <input type="checkbox"/> None | <input type="checkbox"/> Martinborough Around the Vines |
| <input type="checkbox"/> Akaroa French Festival | <input type="checkbox"/> New Zealand Organic Wine and Food Festival (Oamaru) |
| <input type="checkbox"/> Bay of Islands Jazz and Blues Festival | <input type="checkbox"/> New Zealand Wine and Food Festival (London) |
| <input type="checkbox"/> Bluff Oyster and Southland Seafood Festival | <input type="checkbox"/> Organic River Festival (Levin) |
| <input type="checkbox"/> BMW Marlborough Wine Festival | <input type="checkbox"/> Pinot at Cloudy Bay |
| <input type="checkbox"/> Canterbury Wine and Food Festival | <input type="checkbox"/> Savour New Zealand (Christchurch) |
| <input type="checkbox"/> Capital Wine and Food Festival | <input type="checkbox"/> Taranaki Wine and Food Festival |
| <input type="checkbox"/> Central Otago Wine and Food Festival | <input type="checkbox"/> Taste Gisborne Festival |
| <input type="checkbox"/> Christmas Country Fete (Culverden, Nth Canterbury) | <input type="checkbox"/> Taste Northland |
| <input type="checkbox"/> Diners Club Devonport Food and Wine Festival | <input type="checkbox"/> Taste Otago |
| <input type="checkbox"/> "Good Oil" Weekend (Hawkes Bay) | <input type="checkbox"/> Taste the Regions Wines (Napier) |
| <input type="checkbox"/> Harvest Hawkes Bay Wine and Food Extravaganza | <input type="checkbox"/> Tauranga Boutique Food and Wine Festival |
| <input type="checkbox"/> Hokitika Wildfoods Festival | <input type="checkbox"/> The Village Festival (Havelock North) |
| <input type="checkbox"/> Kumeu Food and Wine Festival | <input type="checkbox"/> Toast Martinborough |
| <input type="checkbox"/> Hooked on Seafood (Nelson) | <input type="checkbox"/> Vintage Alfresco |
| <input type="checkbox"/> Kaikoura Seafest | <input type="checkbox"/> Waiheke Wine Festival |
| <input type="checkbox"/> McCullochs Gisborne Wine and Food Festival | <input type="checkbox"/> Waipara Wine and Food Celebration |
| <input type="checkbox"/> Manawatu Wine and Food Festival | <input type="checkbox"/> Wairarapa Wine and Food Festival |
| <input type="checkbox"/> Marlborough Culinary Fare | <input type="checkbox"/> Waitakere Spring Wine Festival |
| <input type="checkbox"/> Marlborough Winter Wine Weekend | <input type="checkbox"/> WETA Wine and Food Festival |
| | <input type="checkbox"/> Other <i>(Please specify FESTIVALS and DATES)</i> |

51. Winery Attributes

How important are the following attributes of YOUR WINERY in attracting visitors?

(Please circle ONE)

	Extremely	Very	Somewhat	Not very	Not at all	Don't know
Winery	1	2	3	4	5	DK
Tasting Area	1	2	3	4	5	DK
Atmosphere and setting	1	2	3	4	5	DK
Quality of wines	1	2	3	4	5	DK
Wine awards received	1	2	3	4	5	DK
Knowledge of your wines	1	2	3	4	5	DK
Meeting the winemaker	1	2	3	4	5	DK
Food	1	2	3	4	5	DK
Location	1	2	3	4	5	DK
Whole experience	1	2	3	4	5	DK
Other (Please specify) _____	1	2	3	4	5	DK

52. Regional Attributes

How important are the following attributes of YOUR WINE REGION in attracting visitors to your winery? (Please circle ONE)

	Extremely	Very	Somewhat	Not very	Not at all	Don't know
Prestige or character of the district	1	2	3	4	5	DK
Quality of the wines	1	2	3	4	5	DK
Other attractions and activities	1	2	3	4	5	DK
Festivals and events	1	2	3	4	5	DK
Scenery	1	2	3	4	5	DK
Size	1	2	3	4	5	DK
Proximity to major city or tourist destination (Please specify PLACE) _____	1	2	3	4	5	DK
Other (Please specify) _____	1	2	3	4	5	DK

53. Information Sources

How important are the following information media for attracting visitors to YOUR WINERY?

Please indicate whether or not you use the media, and if used, how useful you feel it is.

(Please tick to indicate whether source is used and circle ONE option regarding its usefulness)

	Use		Extremely	Very	Somewhat	Not very	Not at all	Don't know
	Yes	No						
Wine shows			1	2	3	4	5	DK
Wine and food festivals			1	2	3	4	5	DK
Wine club			1	2	3	4	5	DK
Retail trade			1	2	3	4	5	DK
Tourism New Zealand			1	2	3	4	5	DK
Local or regional tourism organisation			1	2	3	4	5	DK
Visitor information sources			1	2	3	4	5	DK
Word of mouth			1	2	3	4	5	DK
New Zealand Winegrowers			1	2	3	4	5	DK
Mailing list			1	2	3	4	5	DK
Magazines			1	2	3	4	5	DK
Newspapers			1	2	3	4	5	DK

Radio			1	2	3	4	5	DK
Television			1	2	3	4	5	DK
Guidebooks			1	2	3	4	5	DK
Internet Promotion			1	2	3	4	5	DK
Online Social Networking Media			1	2	3	4	5	DK
Brochures			1	2	3	4	5	DK
Other (Please specify) _____			1	2	3	4	5	DK

54. Tourism and Your Winery

What is your attitude towards tourism activity at YOUR WINERY?

(Please circle)

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Cellar door visitors do not buy much wine	1	2	3	4	5
Tourists are valuable	1	2	3	4	5
Tourism attracts a wide range of customers to my winery	1	2	3	4	5
Tourism provides significant marketing opportunities	1	2	3	4	5
Tourism positively impacts the sales of my wine offshore	1	2	3	4	5
Time spent with visitors to my winery is valuable	1	2	3	4	5
Tourism does not contribute greatly to my business success	1	2	3	4	5
The overall benefits of tourism outweigh the negative impacts	1	2	3	4	5
Tourism does not attract the kind of visitors I want to my winery	1	2	3	4	5

55. Tourism and Your Region

What is your attitude towards tourism and tourism development in YOUR REGION?

(Please circle)

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
The tourism industry is important to the wine industry as a whole	1	2	3	4	5
Promoting tourism in the region brings more visitors to my winery	1	2	3	4	5
I believe that tourism in the region should be actively encouraged in the wine industry	1	2	3	4	5
The wine industry has much to offer the tourism industry	1	2	3	4	5
The tourism industry has much to offer the wine industry	1	2	3	4	5

56. Tourism and Your Wine

What is your attitude towards tourism and wine sales?

(Please circle)

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Tourism enhances product/brand awareness	1	2	3	4	5
Tourism helps to differentiate my wine from others	1	2	3	4	5
Tourism helps to develop mail order sales	1	2	3	4	5
Tourism helps to educate my customers	1	2	3	4	5

57. Tourism Promotion

The following is a list of tourist promotions in your region. Which of these have been successful in attracting visitors to YOUR WINERY? (Please circle ONE)

	Extremely	Very	Somewhat	Not very	Not at all	Don't know
Regional wineries' brochure	1	2	3	4	5	DK
Holiday and travel shows	1	2	3	4	5	DK
Wine and food festivals	1	2	3	4	5	DK
Tourism awards	1	2	3	4	5	DK
Media familiarisation	1	2	3	4	5	DK
Public tastings	1	2	3	4	5	DK
Wine exhibitions/shows	1	2	3	4	5	DK
Regional tourist guides	1	2	3	4	5	DK
Winery based events	1	2	3	4	5	DK
Wine trail or road signage	1	2	3	4	5	DK
Regional website	1	2	3	4	5	DK
Other (please specify)	1	2	3	4	5	DK

57.a Who do you feel should be primarily responsible for **PROMOTING** wine tourism?

(Please rank in order of importance, 1= MOST IMPORTANT)

Regional tourism organisation _____ Individual wineries _____
 Wine industry associations _____ Other (please specify) _____

58. Alliances

What type of relationship, if any, **DO YOU HAVE** with the following organisations?

(Please circle corresponding number for each question or state other relationship)

	None	Contact as required	Member	Co-operative marketing or promotion	Other relationship (Please state)
Tourism New Zealand	1	2	3	4	_____
Regional Tourism Organisation	1	2	3	4	_____
New Zealand Winegrowers	1	2	3	4	_____
Sustainable Winegrowing New Zealand	1	2	3	4	_____

NZGVIG	1	2	3	4	_____
Regional Grape Growers Association	1	2	3	4	_____
NZ Society of Viticulture and Oenology	1	2	3	4	_____
Regional Wine Organisation	1	2	3	4	_____
Tourism Industry Association of NZ	1	2	3	4	_____
100% Pure New Zealand					_____
Business Development Boards	1	2	3	4	_____
Local Council	1	2	3	4	_____
Regional Council	1	2	3	4	_____
Trade and Industry New Zealand	1	2	3	4	_____
Chamber of Commerce					_____
Ministry of Economic Development	1	2	3	4	_____
Other Central Government Agencies	1	2	3	4	_____
Hospitality Associations	1	2	3	4	_____
Local food and wine promotion group/network	1	2	3	4	_____
Other <i>(Please state)</i>	1	2	3	4	_____

Other Promotions

What other promotional activities would you like to see conducted to promote tourism to the wineries in your region?

Do you have any comments on sustainability that have not been covered by this survey, or that you feel are particularly important for your winery, your wine region, or sustainable winegrowing practices in New Zealand?

Your completion of this questionnaire is greatly appreciated. Your response will assist in helping us understand winery characteristics and the emphasis wineries in New Zealand place on sustainability.

PERSONAL DETAILS

PLEASE NOTE: All responses will be treated in the strictest confidence. Any results published will be in aggregate form only, thus ensuring the privacy and protection of all respondents, both individually and within a particular region.

Do you wish to receive a copy of the survey results? Yes No

If yes, how do you wish to receive them? Post Email (Please state email address)

Further surveys

Would you be willing to participate in further surveys Yes No

Your Name

Your organisation

Your title or position

Once again, thank you for completing this questionnaire. It is hoped that at some time in the future this research will benefit both yourselves and the wine industry as a whole.

Appendix B: Tasmanian Wineries Sustainability Survey 2015

WINERY PROFILE

1. Winery Location

In which winery region are you located? *(Please tick ONE)*

- Coal River Valley Derwent Valley East Coast
 Huon/Channel North East North West
 Tamar Valley Other *(please specify)* _____

2. Winery Age

When were grapes first planted in your vineyard? Year _____

When was the first commercial release of your wine? Year _____

When was your winery first opened to visitors? Year _____

3. Employees

Please indicate the total number of full-time, part time and casual workers employed by your winery over the most recent tax year. Please include yourself in these figures.

Fulltime _____ Part-time _____ Casual _____

4. Annual wine Production

Please indicate your total annual wine production in units of litres. _____ litres.

5. Is your wine made on site? *(Please tick)*

Yes

No If no, please state where you have your wine made.

6. How would you describe the ownership status of your winery? *(Please tick ONE)*

Sole proprietor Public company Partnership Trust Private company

Other (Please specify) _____

7. Turnover

Please indicate the TOTAL amount received from the sale of all products and services at your winery over the most recent tax year. Please include sales of wine, food, accommodation and other products and services offered at your winery. Please note the answers will be kept strictly confidential and will be amalgamated and used for statistical purposes only. (Please tick ONE)

- Less than \$50 000 \$50 - \$99 999 \$100 - \$249 999 \$250 - \$499 999
 \$500 - \$750 000 Over \$750 000 Prefer not to state

8. All Sales

What proportion of your winery's total income falls into the following categories? (Please estimate)

Cellar door wine sales _____% Mail order wine sales _____% Other domestic wine sales _____%
Export wine sales _____% Accommodation _____% Other products and services _____%

9. Now thinking about the “Other domestic wine sales” only

What proportion of your domestic wine sales fall into the following categories? *(Please estimate)*

Specialist wine stores _____% Supermarkets _____% Wine clubs _____%

Restaurants _____% Farmers markets _____%

Other outlets *(Please specify)* _____

10. Cellar door sales

Do you offer cellar door sales?

Extre- Some Not Not at Don't
mely Very what very all know

Yes ← If yes, how important are they to your business?

No ← If no, are you intending to offer cellar door sales in the future? Yes No

11. Tasting fees

Do you charge tasting fees? Yes *(Please answer Question 11a)* NO *(if no, continue to Question 12)*

11.a. If yes, do you refund on purchase?

No

Yes, the full amount

Yes, a partial amount *(Please specify)* _____

12. Local sales

Apart from cellar door sales, are your wines available locally? Yes No

If yes, where? Cafés or restaurants Pubs, taverns or wine bars
 Supermarkets Specialist wine stores
 Accommodation Other *(Please specify)* _____

13. Products, services and facilities

What types of products and services do you offer visitors to your winery? *(Please tick ALL that apply)*

A. Products

- Company branded merchandise
- Promotional material
- Regional merchandise
- Company branded promotional material
- Regional promotional material
- Other wine merchandise *(Please specify)* _____

B. Services and Food

- Winery tours
- Vineyard tours
- Wine tasting
- Tasting or snack food
- Host functions
- Host conferences
- Restaurant
- Accommodation
- Events / festivals
- Entertainment
- Other services or food services

C. Facilities

- Wine cave
- Barrel hall
- Winemaking demonstrations
- Historical displays
- Conference facilities
- Children's playground
- BBQ area
- Picnic or entertainment area
- Other facilities *(Please specify)* _____

D. Services for people who have disabilities

Wheelchair access to ← Tasting room Winery Vineyard

Restaurant/wine bar

Toilets

Services for people who have visual or hearing impairments Yes, *(Please specify)* _____

No

Other services for people who have disabilities *(Please specify)* _____

VISITOR PROFILE

For Questions 14 through 16 please indicate the estimated proportion of your visitors who you think would fit into each of these categories. For these questions your best estimate is sufficient.

14. Age

What proportion of your visitors fall into the following age groups?

Under 18 years _____ % 18-29 years _____ % 30-39 years _____ % 40-49 years _____ %
50-59 years _____ % 60 + years _____ %

15. Gender

What proportion of your visitors are male and what proportion are female?

Male _____% Female _____%

16. Visitor Origin

What proportion of your visitors are from Australia and what proportion are from overseas?

Australian Visitors _____% Overseas Visitors _____%

17. Wine Tourism Groups

Does your vineyard form part of any commercial wine tour? Yes No

If yes, what types of tours visit your vineyard? (Please tick)

Self-guided tours Local tour operator(s) Travel company(s)

18. Visitor Information Collection

How do you collect information about the number of people visiting your winery? *(Please tick as many as applicable)*

- | | |
|--|---|
| <input type="checkbox"/> No systematic way of collecting the information | <input type="checkbox"/> Till receipts |
| <input type="checkbox"/> Mailing list | <input type="checkbox"/> Counters <i>(Please specify)</i> _____ |
| <input type="checkbox"/> Surveys | <input type="checkbox"/> Other <i>(Please specify)</i> _____ |

19. Reasons for visit

What do you consider to be the main reason visitors come to your winery? *(Please tick as many as applicable)*

- | | | |
|---------------------------------------|---|---|
| <input type="checkbox"/> Buying wines | <input type="checkbox"/> Tasting wines | <input type="checkbox"/> Learning about wines |
| <input type="checkbox"/> Winery tour | <input type="checkbox"/> Meeting the wine maker | <input type="checkbox"/> Organic wines |
| <input type="checkbox"/> Socialising | <input type="checkbox"/> Picnic or BBQ | <input type="checkbox"/> A day out |
| <input type="checkbox"/> Relaxation | <input type="checkbox"/> Festivals or events | |

20. Visitor attributes

How would you describe the majority of visitors to your winery? *(Please give a percentage estimate in the box provided. The sum total of ALL percentages must add up to 100%)*

Wine lovers... with advanced knowledge of wine _____%

Wine interested... with intermediate knowledge of wine _____%

Wine curious... with basic or no knowledge of wine _____%

21. Visitor Information

Do you believe that information on visitor numbers and characteristics would be, or is useful to your business operation? *(Please circle)* Strongly Agree Unsure Disagree Strongly

Agree

Disagree

SUSTAINABILITY

22. Is your winery currently an accredited member of a local sustainable winegrowing scheme?

- Yes No

23. Please describe the level of commitment that you winery has towards sustainability *(Please select one option)*

- Not interested in adopting sustainable practices *(If not, please go to Question 33)*
- Interested in adopting sustainable practices
- Planning to adopt sustainable practices but not ready yet
- Have already adopted sustainable practices

24. Which of the following statements best defines how your organisation defines sustainability?

(Please rate on a scale of 1 to 5, where 1 is "No impact" and 5 is "Major impact")

	Rating
Sustainability refers to climate change issues	
Sustainability refers to other environmental issues	
Sustainability refers to corporate social responsibility issues	
Sustainability refers to maintaining the viability of our business	
Sustainability incorporates climate change, environmental, social and economic issues	
Sustainability refers to meeting the needs of the current generation without compromising the ability of future generations to meet their needs	
Sustainability refers to biodiversity issues	
Sustainability refers to social justice issues	
Sustainability refers to addressing issues from a long-term perspective	

25. Has your winery developed a clear business case for addressing sustainability?

- Yes No Unsure Have tried, but it was too difficult to develop and continue

38. Do you believe that biosecurity measures should be part of your local sustainable winegrowing scheme?

Yes

No

ENVIRONMENTAL INNOVATION AND YOUR WINERY

For the purpose of this survey innovation is broadly defined. It includes the development or introduction of any new or significantly improved activity for your winery. This includes products, processes and methods that the winery was first to develop and those that have been adopted from other organisations.

39a. During the last two financial years did you winery introduce on to the market any new or significantly improved goods or services?

(Don't include the selling of new goods or services wholly produced and developed by other businesses)

- Yes (Please answer Question 39b) No (if no, continue to Question 40a)

39b. Were any of these new or significantly improved goods or services *(Please select ALL that apply)*

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

39c. For the last financial year please select the ONE option that best estimates the percentage of sales for this winery that came from those new or significantly improved goods or services.

- Zero 30% or less Don't Know
- 10% or less 40% or less
- 20% or less 41% - 100%

40a. During the last two financial years did you winery introduce on to the market any new or significantly improved operational processes? (i.e. methods of producing or distributing goods or services)

Yes (please answer Question 40b) No (if no, continue to Question 41a)

40b. Were any of these new or significantly improved operational processes: (Please select ALL that apply)

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

41a. During the last two financial years did you winery introduce on to the market any new or significantly improved organisational/managerial processes? (i.e. significant changes in your winery's strategies, structures or routines)?

Yes (please answer Question 41b) No (if no, continue to Question 42a)

41b. Were any of these new or significantly improved organisational/managerial processes: *(Please select ALL that apply)*

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

42a. During the last two financial years did you winery introduce on to the market any new or significantly improved sales or marketing methods which were intended to either increase the appeal of goods or services for specific market segments or to gain entry to new markets?

- Yes *(Please answer Question 42b)* No *(if no, continue to Question 43)*

42b. Were any of these new or significantly improved sales or marketing methods: *(Please select ALL that apply)*

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

43. Reasons for innovation

During the last two financial years what were the reasons that your winery tried to innovate?

(Please tick)

	Yes	No	Don't know
To improve productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To increase productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To increase responsiveness to customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To increase market share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To establish/exploit new market opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To improve work safety standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce energy consumption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce environmental impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To replace goods and services being phased out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

44. Sources of ideas or information for innovation

During the last two financial years did this winery find any of the following important as a source of ideas or information for innovation? *(Please tick)*

	Yes	No	Don't Know
New staff (those appointed in the last two years)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Existing staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other businesses within the business group (e.g. subsidiaries or parent companies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitors and other businesses from the same industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business from other industries (not including customers or suppliers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Professional advisors, consultants, banks or accountants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Books, journals, patent disclosures or the Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wine shows, festivals or conferences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industry or employer organisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Universities or polytechnics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crown Research institutes, other research institutes or research associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Government agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

45. Activities to support innovation

During the last two financial years did your winery do any of the following: *(Please tick)*

	Done to support innovation	Done, though not to support innovation	Not done	Don't know
Introduce a new variety of grape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Use new viticultural techniques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Acquire new machinery and equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Acquire new computer hardware and software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Acquire other knowledge (e.g. outsourcing for new viticultural techniques or other intellectual property)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Implement organisational restructuring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Design (e.g. graphic design on labelling of bottles)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			
Market the introduction of new goods and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>			

Market
research

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>		

Make significant changes to existing market
strategies

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>		

Employee
training

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>		

CO-OPERATIVE ARRANGEMENTS

In the following questions co-operative arrangements mean actively participating with another organisation or individual in activities for the purpose of innovation.

46. During the last two financial years did this business have any co-operative arrangements for the purpose of innovation?

- Yes (please answer Question 47) No (if no, continue to Question 50)

47. During the last two financial years with what types of businesses or institutions did this business have those co-operative arrangements? (Please tick)

	Canada	Overseas	No co-operation
Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Businesses from other industries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitors and other businesses from the same industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other business from within the business group (e.g. subsidiaries and parent companies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Universities or polytechnics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crown Research institutes, other research institutes or research associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

48. During the last two financial years in which activities did this business engage in co-operative arrangements as defined at the start of this section? (Please tick as many as applicable)

- Joint marketing or distribution Joint R & D Joint training
 Joint production Joint prototype development Other

49. During the last two financial years for what reasons did this business engage in co-operative arrangements as defined at the start of this section? (Please tick as many as applicable)

- | | |
|--|--|
| <input type="checkbox"/> Sharing costs | <input type="checkbox"/> Access to work practices |
| <input type="checkbox"/> Spreading risk | <input type="checkbox"/> Access to financial resources |
| <input type="checkbox"/> Access to R & D | <input type="checkbox"/> Access to new markets |
| <input type="checkbox"/> Access to production processes | <input type="checkbox"/> Access to new suppliers |
| <input type="checkbox"/> Access to management skills | <input type="checkbox"/> Other |
| <input type="checkbox"/> Access to new distribution channels | |

TOURISM AND MARKETING

50. Wine and Food Festivals

What, if any, wine and food festivals did you participate in over the most recent tax year? *(Please tick as many as is appropriate)*

- | | |
|---|---|
| <input type="checkbox"/> None
<input type="checkbox"/> A Taste of Huon
<input type="checkbox"/> Bicheno Food and Wine Festival
<input type="checkbox"/> Clarence Jazz Festival
<input type="checkbox"/> Dark MoFo
<input type="checkbox"/> Devonport Jazz Festival
<input type="checkbox"/> Effervescence Tasmania Sparkling Weekend
<input type="checkbox"/> Festivale 2015
<input type="checkbox"/> Festival in the Park
<input type="checkbox"/> Harvest Launceston Farmers Market
<input type="checkbox"/> New Year on the Royal
<input type="checkbox"/> Royal Hobart International Wine Show
<input type="checkbox"/> Savour Tasmania
<input type="checkbox"/> The Seafarer's Festival | <input type="checkbox"/> Southern Vineyards' Open Weekend
<input type="checkbox"/> The Taste of Tasmania
<input type="checkbox"/> Tasmania Unbottled
<input type="checkbox"/> Tasmania Food & Wine Expo
<input type="checkbox"/> Tasmanian Red Wine Weekend
<input type="checkbox"/> Tasmanian White Wine Weekend
<input type="checkbox"/> Taste of Tamar
<input type="checkbox"/> Taste of the Northwest
<input type="checkbox"/> Tastings at the Top
<input type="checkbox"/> Taste the Harvest
<input type="checkbox"/> Other
<i>(Please specify)</i> _____ |
|---|---|

51. Winery Attributes

How important are the following attributes of YOUR WINERY in attracting visitors? *(Please circle ONE)*

	Extremely	Very	Somewhat	Not very	Not at all	Don't know
Winery	1	2	3	4	5	DK
Tasting Area	1	2	3	4	5	DK
Atmosphere and setting	1	2	3	4	5	DK
Quality of wines	1	2	3	4	5	DK
Wine awards received	1	2	3	4	5	DK
Knowledge of your wines	1	2	3	4	5	DK
Meeting the winemaker	1	2	3	4	5	DK
Food	1	2	3	4	5	DK
Location	1	2	3	4	5	DK
Whole experience	1	2	3	4	5	DK
Other (Please specify) _____	1	2	3	4	5	DK

52. Regional Attributes

How important are the following attributes of YOUR WINE REGION in attracting visitors to your winery? (Please circle ONE)

	Extremely	Very	Somewhat	Not very	Not at all	Don't know
Prestige or character of the district	1	2	3	4	5	DK
Quality of the wines	1	2	3	4	5	DK
Other attractions and activities	1	2	3	4	5	DK
Festivals and events	1	2	3	4	5	DK
Scenery	1	2	3	4	5	DK
Size	1	2	3	4	5	DK
Proximity to major city or tourist destination (Please specify PLACE) _____	1	2	3	4	5	DK
Other (Please specify) _____	1	2	3	4	5	DK

53. Information Sources

How important are the following information media for attracting visitors to YOUR WINERY?

Please indicate whether or not you use the media, and if used, how useful you feel it is.

(Please tick to indicate whether source is used and circle ONE option regarding its usefulness)

	Use		Extremely	Very	Somewhat	Not very	Not at all	Don't know
	Yes	No						
Wine shows			1	2	3	4	5	DK
Wine and food festivals			1	2	3	4	5	DK
Wine club			1	2	3	4	5	DK
Retail trade			1	2	3	4	5	DK
Discover Tasmania			1	2	3	4	5	DK
Tourism Tasmania			1	2	3	4	5	DK
Local or regional tourism organisation			1	2	3	4	5	DK
Visitor information sources			1	2	3	4	5	DK
Word of mouth			1	2	3	4	5	DK
Wine Tasmania			1	2	3	4	5	DK
Australian Wine and Grape Authority			1	2	3	4	5	DK
Winemakers' Federation of Australia			1	2	3	4	5	DK
Wine Australia			1	2	3	4	5	DK
Wine Grape Growers Australia			1	2	3	4	5	DK
Mailing list			1	2	3	4	5	DK
Magazines			1	2	3	4	5	DK
Newspapers			1	2	3	4	5	DK

Radio			1	2	3	4	5	DK
Television			1	2	3	4	5	DK
Guidebooks			1	2	3	4	5	DK
Internet Promotion			1	2	3	4	5	DK
Online Social Networking Media			1	2	3	4	5	DK
Brochures			1	2	3	4	5	DK
Other (<i>Please specify</i>) _____			1	2	3	4	5	DK

54. Tourism and Your Winery

What is your attitude towards tourism activity at YOUR WINERY?

(Please circle)

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Cellar door visitors do not buy much wine	1	2	3	4	5
Tourists are valuable	1	2	3	4	5
Tourism attracts a wide range of customers to my winery	1	2	3	4	5
Tourism provides significant marketing opportunities	1	2	3	4	5
Tourism positively impacts the sales of my wine offshore	1	2	3	4	5
Time spent with visitors to my winery is valuable	1	2	3	4	5
Tourism does not contribute greatly to my business success	1	2	3	4	5
The overall benefits of tourism outweigh the negative impacts	1	2	3	4	5
Tourism does not attract the kind of visitors I want to my winery	1	2	3	4	5

55. Tourism and Your Region

What is your attitude towards tourism and tourism development in YOUR REGION?

(Please circle)

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
The tourism industry is important to the wine industry as a whole	1	2	3	4	5
Promoting tourism in the region brings more visitors to my winery	1	2	3	4	5
I believe that tourism in the region should be actively encouraged in the wine industry	1	2	3	4	5
The wine industry has much to offer the tourism industry	1	2	3	4	5
The tourism industry has much to offer the wine industry	1	2	3	4	5

56. Tourism and Your Wine

What is your attitude towards tourism and wine sales?

(Please circle)

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Tourism enhances product/brand awareness	1	2	3	4	5
Tourism helps to differentiate my wine from others	1	2	3	4	5
Tourism helps to develop mail order sales	1	2	3	4	5
Tourism helps to educate my customers	1	2	3	4	5

57. Tourism Promotion

The following is a list of tourist promotions in your region. Which of these have been successful in attracting visitors to YOUR WINERY? (Please circle ONE)

	Extremely	Very	Somewhat	Not very	Not at all	Don't know
Regional wineries' brochure	1	2	3	4	5	DK
Holiday and travel shows	1	2	3	4	5	DK
Wine and food festivals	1	2	3	4	5	DK
Tourism awards	1	2	3	4	5	DK
Media familiarisation	1	2	3	4	5	DK
Public tastings	1	2	3	4	5	DK
Wine exhibitions/shows	1	2	3	4	5	DK
Regional tourist guides	1	2	3	4	5	DK
Winery based events	1	2	3	4	5	DK
Wine trail or road signage	1	2	3	4	5	DK
Regional website	1	2	3	4	5	DK
Other (please specify)	1	2	3	4	5	DK

57.a Who do you feel should be primarily responsible for **PROMOTING** wine tourism?

(Please rank in order of importance, 1= MOST IMPORTANT)

Regional tourism organisation _____

Individual wineries _____

Wine industry associations _____

Other (please specify) _____

58. Alliances

What type of relationship, if any, **DO YOU HAVE** with the following organisations?

(Please circle corresponding number for each question or state other relationship)

	None	Contact as required	Member	Co-operative marketing or promotion	Other relationship <i>(Please state)</i>
Discover Tasmania	1	2	3	4	_____
Tourism Tasmania	1	2	3	4	_____
Wine Tasmania	1	2	3	4	_____
Australian Wine and Grape Authority	1	2	3	4	_____
Winemakers' Federation of Australia	1	2	3	4	_____
Wine Australia	1	2	3	4	_____
Tourism Industry Council of Tasmania	1	2	3	4	_____
Wine Grape Growers Australia	1	2	3	4	_____
Regional Grape Growers Association	1	2	3	4	_____
Department of Primary Industries, Parks, Water and the Environment	1	2	3	4	_____
Department of Agriculture	1	2	3	4	_____
Regional Wine Organisation	1	2	3	4	_____
Business Development Boards	1	2	3	4	_____
Local Council	1	2	3	4	_____
Regional Council	1	2	3	4	_____
Environment Protection Authority	1	2	3	4	_____
AgriGrowth Tasmania	1	2	3	4	_____
Other Central Government Agencies	1	2	3	4	_____
Hospitality Associations	1	2	3	4	_____
Local food and wine promotion group/network	1	2	3	4	_____
Other <i>(Please state)</i>	1	2	3	4	_____

Other Promotions

What other promotional activities would you like to see conducted to promote tourism to the wineries in your region?

Do you have any comments on sustainability that have not been covered by this survey, or that you feel are particularly important for your winery, your wine region, or sustainable winegrowing practices in Tasmania?

Your completion of this questionnaire is greatly appreciated. Your response will assist in helping us understand winery characteristics and the emphasis wineries in Tasmania place on sustainability.

PERSONAL DETAILS

PLEASE NOTE: All responses will be treated in the strictest confidence. Any results published will be in aggregate form only, thus ensuring the privacy and protection of all respondents, both individually and within a particular region.

Do you wish to receive a copy of the survey results? Yes No

If yes, how do you wish to receive them? Post Email (Please state email address)

Further surveys

Would you be willing to participate in further surveys Yes No

Your Name

Your organisation

Your title or position

Once again, thank you for completing this questionnaire. It is hoped that at some time in the future this research will benefit both yourselves and the wine industry as a whole.

Appendix C: Western Australian Wineries Sustainability Survey 2016

WINERY PROFILE

1. Winery Location

In which winery region are you located? *(Please tick ONE)*

- | | | |
|--|---|---|
| <input type="checkbox"/> Blackwood Valley | <input type="checkbox"/> Central Western Australia Zone | |
| <input type="checkbox"/> Denmark | <input type="checkbox"/> Frankland River | <input type="checkbox"/> Geographe |
| <input type="checkbox"/> Great Southern | <input type="checkbox"/> Greater Perth Zone | <input type="checkbox"/> Margaret River |
| <input type="checkbox"/> Mount Barker | <input type="checkbox"/> Peel | <input type="checkbox"/> Pemberton |
| <input type="checkbox"/> Perth Hills | <input type="checkbox"/> Porongurup | <input type="checkbox"/> Swan Valley |
| <input type="checkbox"/> Other <i>(please specify)</i> _____ | | |

2. Winery Age

When were grapes first planted in your vineyard? Year _____

When was the first commercial release of your wine? Year _____

When was your winery first opened to visitors? Year _____

3. Employees

Please indicate the total number of full-time, part time and casual workers employed by your winery over the most recent tax year. Please include yourself in these figures.

Fulltime _____ Part-time _____ Casual _____

4. Annual Wine Production

Please indicate your total annual wine production in units of litres. _____ litres.

5. Is your wine made on site? *(Please tick)*

- Yes
 No If no, please state where you have your wine made.

6. How would you describe the ownership status of your winery? *(Please tick ONE)*

- Sole proprietor Public company Partnership Trust Private company
 Other *(Please specify)* _____

7. Turnover

Please indicate the TOTAL amount received from the sale of all products and services at your winery over the most recent tax year. Please include sales of wine, food, accommodation and other products and services offered at your winery. Please note the answers will be kept *strictly confidential* and will be amalgamated and used for statistical purposes only. *(Please tick ONE)*

- | | | | |
|---|--|--|--|
| <input type="checkbox"/> Less than \$50 000 | <input type="checkbox"/> \$50 - \$99 999 | <input type="checkbox"/> \$100 - \$249 999 | <input type="checkbox"/> \$250 - \$499 999 |
| <input type="checkbox"/> \$500 - \$750 000 | <input type="checkbox"/> Over \$750 000 | <input type="checkbox"/> Prefer not to state | |

8. All Sales

What proportion of your winery's total income falls into the following categories? *(Please estimate)*

Cellar door wine sales _____% Mail order wine sales _____% Other domestic wine sales _____%
Export wine sales _____% Accommodation _____% Other products and services _____%

SUSTAINABILITY

22. Is your winery currently an accredited member of a local sustainable winegrowing scheme?

- Yes No

23. Please describe the level of commitment that you winery has towards sustainability *(Please select one option)*

- Not interested in adopting sustainable practices *(If not, please go to Question 33)*
 Interested in adopting sustainable practices
 Planning to adopt sustainable practices but not ready yet
 Have already adopted sustainable practices

24. Which of the following statements best defines how your organisation defines sustainability?

(Please rate on a scale of 1 to 5, where 1 is "No impact" and 5 is "Major impact")

	Rating
Sustainability refers to climate change issues	
Sustainability refers to other environmental issues	
Sustainability refers to corporate social responsibility issues	
Sustainability refers to maintaining the viability of our business	
Sustainability incorporates climate change, environmental, social and economic issues	
Sustainability refers to meeting the needs of the current generation without compromising the ability of future generations to meet their needs	
Sustainability refers to biodiversity issues	
Sustainability refers to social justice issues	
Sustainability refers to addressing issues from a long-term perspective	

25. Has your winery developed a clear business case for addressing sustainability?

- Yes No Unsure Have tried, but it was too difficult to develop and continue

26. Please rate the potential impact of the following sustainability practices for your winery.

(Please rate on a scale of 1 to 5, where 1 is "Not important", 3 is "Important" and 5 is "Extremely important")

	Rating
Sustainability refers to climate change issues	
Sustainability refers to other environmental issues	
Sustainability refers to corporate social responsibility issues	
Sustainability refers to maintaining the viability of our business	
Sustainability incorporates climate change, environmental, social and economic issues	
Sustainability refers to meeting the needs of the current generation without compromising the ability of future generations to meet their needs	
Sustainability refers to biodiversity issues	
Sustainability refers to social justice issues	
Sustainability refers to addressing issues from a long-term perspective	

33. Biosecurity

Does your vineyard currently have biosecurity measures in place with respect to wine tourists?

- Yes No

35. Are visitors allowed to wander freely amongst the vines at your winery?

- Yes No

36. Do you believe that your winery currently receives adequate information regarding biosecurity threats from Government agencies? *(Please select one of the following options)*

Strongly Agree Unsure Disagree Strongly

Agree

disagree

37. How does your winery currently receive information regarding potential biosecurity threats? *(Please select as many as applicable)*

- | | |
|---|--|
| <input type="checkbox"/> Department of Primary Industries, Parks, Water and the Environment | <input type="checkbox"/> Local or regional councils |
| <input type="checkbox"/> Department of Agriculture | <input type="checkbox"/> Television |
| <input type="checkbox"/> Wines of Western Australia | <input type="checkbox"/> Word of mouth |
| <input type="checkbox"/> Winemakers' Federation of Australia | <input type="checkbox"/> Universities or TAFE Colleges |
| <input type="checkbox"/> Australian Wine and Grape Authority | <input type="checkbox"/> Crown Research Institutes |
| <input type="checkbox"/> Wine Grape Growers Australia | <input type="checkbox"/> Websites |
| <input type="checkbox"/> Wine Australia | <input type="checkbox"/> Newspapers |
| | <input type="checkbox"/> Other competing businesses within the wine industry |
| | <input type="checkbox"/> Other <i>(Please specify)</i> _____ |

38. Do you believe that biosecurity measures should be part of your local sustainable winegrowing scheme?

- Yes No

ENVIRONMENTAL INNOVATION AND YOUR WINERY

For the purpose of this survey innovation is broadly defined. It includes the development or introduction of any new or significantly improved activity for your winery. This includes products, processes and methods that the winery was first to develop and those that have been adopted from other organisations.

39a. During the last two financial years did you winery introduce on to the market any new or significantly improved goods or services?

(Don't include the selling of new goods or services wholly produced and developed by other businesses)

Yes (Please answer Question 39b) No (if no, continue to Question 40a)

39b. Were any of these new or significantly improved goods or services (Please select ALL that apply)

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

39c. For the last financial year please select the ONE option that best estimates the percentage of sales for this winery that came from those new or significantly improved goods or services.

- Zero
- 10% or less
- 20% or less
- 30% or less
- 40% or less
- 41% - 100%
- Don't Know

40a. During the last two financial years did you winery introduce on to the market any new or significantly improved operational processes? (i.e. methods of producing or distributing goods or services)

Yes (please answer Question 40b) No (if no, continue to Question 41a)

40b. Were any of these new or significantly improved operational processes: (Please select ALL that apply)

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

41a. During the last two financial years did you winery introduce on to the market any new or significantly improved organisational/managerial processes? (i.e. significant changes in your winery's strategies, structures or routines)?

Yes (please answer Question 41b) No (if no, continue to Question 42a)

41b. Were any of these new or significantly improved organisational/managerial processes:

(Please select ALL that apply)

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

42a. During the last two financial years did you winery introduce on to the market any new or significantly improved sales or marketing methods which were intended to either increase the appeal of goods or services for specific market segments or to gain entry to new markets?

- Yes *(Please answer Question 42b)* No *(if no, continue to Question 43)*

42b. Were any of these new or significantly improved sales or marketing methods: *(Please select ALL that apply)*

- Developed by this business
- Obtained from others and significant improvements were made by this business
- Developed by this business in partnership with others
- Obtained from others and NO significant and significant improvements were made by this business

43. Reasons for innovation

During the last two financial years what were the reasons that your winery tried to innovate?
(Please tick)

	Yes	No	Don't know
To improve productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To increase productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To increase responsiveness to customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To increase market share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To establish/exploit new market opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To improve work safety standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce energy consumption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce environmental impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To replace goods and services being phased out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

44. Sources of ideas or information for innovation

During the last two financial years did this winery find any of the following important as a source of ideas or information for innovation? *(Please tick)*

	Yes	No	Don't know
New staff (those appointed in the last two years)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Existing staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other businesses within the business group (e.g. subsidiaries or parent companies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitors and other businesses from the same industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business from other industries (not including customers or suppliers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Professional advisors, consultants, banks or accountants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Books, journals, patent disclosures or the Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wine shows, festivals or conferences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industry or employer organisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Universities or TAFE colleges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other government funded research institutes or research associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Government agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

45. Activities to support innovation

During the last two financial years did your winery do any of the following: *(Please tick)*

	Done to support innovation	Done, though not to support innovation	Not done	Don't know
Introduce a new variety of grape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use new viticultural techniques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acquire new machinery and equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acquire new computer hardware and software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acquire other knowledge (e.g. outsourcing for new viticultural techniques or other intellectual property)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implement organisational restructuring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design (e.g. graphic design on labelling of bottles)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Market the introduction of new goods and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Market research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make significant changes to existing market strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employee training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CO-OPERATIVE ARRANGEMENTS

In the following questions co-operative arrangements mean actively participating with another organisation or individual in activities for the purpose of innovation.

46. During the last two financial years did this business have any co-operative arrangements for the purpose of innovation?

- Yes (please answer Question 47) No (if no, continue to Question 50)

47. During the last two financial years with what types of businesses or institutions did this business have those co-operative arrangements? (Please tick)

	Australian	Overseas	No co-operation
Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Businesses from other industries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitors and other businesses from the same industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other business from within the business group (e.g. subsidiaries and parent companies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Universities or TAFE colleges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other government funded research institutes or research associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

48. During the last two financial years in which activities did this business engage in co-operative arrangements as defined at the start of this section? (Please tick as many as applicable)

- Joint marketing or distribution Joint R & D Joint training
 Joint production Joint prototype development Other

49. During the last two financial years for what reasons did this business engage in co-operative arrangements as defined at the start of this section? (Please tick as many as applicable)

- | | |
|--|---|
| <input type="checkbox"/> Sharing costs
<input type="checkbox"/> Spreading risk
<input type="checkbox"/> Access to R & D
<input type="checkbox"/> Access to production processes
<input type="checkbox"/> Access to management skills
<input type="checkbox"/> Access to new distribution channels | <input type="checkbox"/> Access to work practices
<input type="checkbox"/> Access to financial resources
<input type="checkbox"/> Access to new markets
<input type="checkbox"/> Access to new suppliers
<input type="checkbox"/> Other |
|--|---|

TOURISM AND MARKETING

50. Wine and Food Festivals

What, if any, wine and food festivals did you participate in over the most recent tax year? *(Please tick as many as is appropriate)*

- | | |
|---|--|
| <input type="checkbox"/> None
<input type="checkbox"/> Bickley Harvest Festival
<input type="checkbox"/> Coonawarra Wine Tasting Roadshow - Perth
<input type="checkbox"/> The Donnybrook Wine and Food Festival
<input type="checkbox"/> Frankland Estate Flowering of the Vine Luncheon
<input type="checkbox"/> Geographe Crush Food and Wine Festival
<input type="checkbox"/> The Good Food and Wine Show - Perth
<input type="checkbox"/> Leeuwin Concert Series
<input type="checkbox"/> Margaret River Gourmet Escape
<input type="checkbox"/> Margaret River Wine in Perth
<input type="checkbox"/> Margaret River Wine Show Masterclass
<input type="checkbox"/> Perth Food and Wine Expo
<input type="checkbox"/> Porongurup Wine Festival | <input type="checkbox"/> Taste Great Southern
<input type="checkbox"/> Taste of the Blackwood
<input type="checkbox"/> Unwined Western Australia
<input type="checkbox"/> Wignalls Vintage Music Festival
<input type="checkbox"/> Winter Reds Long Table Lunch 2015
<input type="checkbox"/> Blackwood Valley and WA Boutique Wine Show
<input type="checkbox"/> Geographe Wine Show 2015
<input type="checkbox"/> 2015 Vintage Cellars Margaret River Wine Show
<input type="checkbox"/> Swan Valley Wine Show
<input type="checkbox"/> The West Australian Alternative Variety Wine Show
<input type="checkbox"/> Wheatbelt Midwest Wine Show of WA
<input type="checkbox"/> Other <i>(please specify)</i> _____ |
|---|--|

51. Winery Attributes

How important are the following attributes of YOUR WINERY in attracting visitors? *(Please circle ONE)*

	Extremely	Very	Somewhat	Not very	Not at all	Don't know
Winery	1	2	3	4	5	DK
Tasting Area	1	2	3	4	5	DK
Atmosphere and setting	1	2	3	4	5	DK
Quality of wines	1	2	3	4	5	DK
Wine awards received	1	2	3	4	5	DK
Knowledge of your wines	1	2	3	4	5	DK
Meeting the winemaker	1	2	3	4	5	DK
Food	1	2	3	4	5	DK
Location	1	2	3	4	5	DK
Whole experience	1	2	3	4	5	DK
Other (Please specify) _____	1	2	3	4	5	DK

52. Regional Attributes

How important are the following attributes of YOUR WINE REGION in attracting visitors to your winery? (Please circle ONE)

	Extremely	Very	Somewhat	Not very	Not at all	Don't know
Prestige or character of the district	1	2	3	4	5	DK
Quality of the wines	1	2	3	4	5	DK
Other attractions and activities	1	2	3	4	5	DK
Festivals and events	1	2	3	4	5	DK
Scenery	1	2	3	4	5	DK
Size	1	2	3	4	5	DK
Proximity to major city or tourist destination (Please specify PLACE) _____	1	2	3	4	5	DK
Other (Please specify) _____	1	2	3	4	5	DK

53. Information Sources

How important are the following information media for attracting visitors to YOUR WINERY?

Please indicate whether or not you use the media, and if used, how useful you feel it is.

(Please tick to indicate whether source is used and circle ONE option regarding its usefulness)

	Use		Extremely	Very	Somewhat	Not very	Not at all	Don't know
	Yes	No						
Wine shows			1	2	3	4	5	DK
Wine and food festivals			1	2	3	4	5	DK
Wine club			1	2	3	4	5	DK
Retail trade			1	2	3	4	5	DK
Wine Western Australia			1	2	3	4	5	DK
Tourism Western Australia			1	2	3	4	5	DK
Local or regional tourism organisation			1	2	3	4	5	DK
Visitor information sources			1	2	3	4	5	DK
Word of mouth			1	2	3	4	5	DK
Australian Wine and Grape Authority			1	2	3	4	5	DK
Winemakers' Federation of Australia			1	2	3	4	5	DK
Wine Australia			1	2	3	4	5	DK
Wine Grape Growers Australia			1	2	3	4	5	DK
Mailing list			1	2	3	4	5	DK
Magazines			1	2	3	4	5	DK
Newspapers			1	2	3	4	5	DK
Radio			1	2	3	4	5	DK
Television			1	2	3	4	5	DK
Guidebooks			1	2	3	4	5	DK
Internet Promotion			1	2	3	4	5	DK
Online Social Networking Media			1	2	3	4	5	DK
Brochures			1	2	3	4	5	DK
Other (Please specify) _____			1	2	3	4	5	DK

54. Tourism and Your Winery

What is your attitude towards tourism activity at YOUR WINERY?

(Please circle)

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Cellar door visitors do not buy much wine	1	2	3	4	5
Tourists are valuable	1	2	3	4	5
Tourism attracts a wide range of customers to my winery	1	2	3	4	5
Tourism provides significant marketing opportunities	1	2	3	4	5
Tourism positively impacts the sales of my wine offshore	1	2	3	4	5
Time spent with visitors to my winery is valuable	1	2	3	4	5
Tourism does not contribute greatly to my business success	1	2	3	4	5
The overall benefits of tourism outweigh the negative impacts	1	2	3	4	5
Tourism does not attract the kind of visitors I want to my winery	1	2	3	4	5

55. Tourism and Your Region

What is your attitude towards tourism and tourism development in YOUR REGION?

(Please circle)

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
The tourism industry is important to the wine industry as a whole	1	2	3	4	5
Promoting tourism in the region brings more visitors to my winery	1	2	3	4	5
I believe that tourism in the region should be actively encouraged in the wine industry	1	2	3	4	5
The wine industry has much to offer the tourism industry	1	2	3	4	5
The tourism industry has much to offer the wine industry	1	2	3	4	5

56. Tourism and Your Wine

What is your attitude towards tourism and wine sales?

(Please circle)

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Tourism enhances product/brand awareness	1	2	3	4	5
Tourism helps to differentiate my wine from others	1	2	3	4	5
Tourism helps to develop mail order sales	1	2	3	4	5
Tourism helps to educate my customers	1	2	3	4	5

57. Tourism Promotion

The following is a list of tourist promotions in your region. Which of these have been successful in attracting visitors to YOUR WINERY? (Please circle ONE)

	Extremely	Very	Somewhat	Not very	Not at all	Don't know
Regional wineries' brochure	1	2	3	4	5	DK
Holiday and travel shows	1	2	3	4	5	DK
Wine and food festivals	1	2	3	4	5	DK
Tourism awards	1	2	3	4	5	DK
Media familiarisation	1	2	3	4	5	DK
Public tastings	1	2	3	4	5	DK
Wine exhibitions/shows	1	2	3	4	5	DK
Regional tourist guides	1	2	3	4	5	DK
Winery based events	1	2	3	4	5	DK
Wine trail or road signage	1	2	3	4	5	DK
Regional website	1	2	3	4	5	DK
Other (please specify)	1	2	3	4	5	DK

57.a Who do you feel should be primarily responsible for **PROMOTING** wine tourism? (Please rank in order of importance, 1= MOST IMPORTANT)

Regional tourism organisation _____ Individual wineries _____
 Wine industry associations _____ Other (please specify) _____

58. Alliances

What type of relationship, if any, **DO YOU HAVE** with the following organisations? (Please circle corresponding number for each question or state other relationship)

	None	Contact as required	Member	Co-operative marketing or promotion	Other relationship (Please state)
Tourism Western Australia	1	2	3	4	_____
Wine Western Australia	1	2	3	4	_____
Australian Wine and Grape Authority	1	2	3	4	_____
Winemakers' Federation of Australia	1	2	3	4	_____
Wine Australia	1	2	3	4	_____
Wine Grape Growers Australia	1	2	3	4	_____
Regional Grape Growers Association	1	2	3	4	_____
Department of Primary Industries, Parks, Water and the Environment	1	2	3	4	_____
Department of Agriculture	1	2	3	4	_____
Regional Wine Organisation	1	2	3	4	_____
Business Development Boards	1	2	3	4	_____
Local Council	1	2	3	4	_____
Regional Council	1	2	3	4	_____
Environment Protection Authority	1	2	3	4	_____
Other Central Government Agencies	1	2	3	4	_____
Hospitality Associations	1	2	3	4	_____
Local food and wine promotion group/network	1	2	3	4	_____
Other (Please state)	1	2	3	4	_____

Other Promotions

What other promotional activities would you like to see conducted to promote tourism to the wineries in your region?

Do you have any comments on sustainability that have not been covered by this survey, or that you feel are particularly important for your winery, your wine region, or sustainable winegrowing practices in Western Australia?

Your completion of this questionnaire is greatly appreciated. Your response will assist in helping us understand winery characteristics and the emphasis wineries in Western Australia place on sustainability.

PERSONAL DETAILS

PLEASE NOTE: All responses will be treated in the strictest confidence. Any results published will be in aggregate form only, thus ensuring the privacy and protection of all respondents, both individually and within a particular region.

Do you wish to receive a copy of the survey results? Yes No

If yes, how do you wish to receive them? Post Email (Please state email address)

Further surveys

Would you be willing to participate in further surveys Yes
No

Your Name

Your
organisation

Your title or
position

Once again, thank you for completing this questionnaire. It is hoped that at some time in the future this research will benefit both yourselves and the wine industry as a whole.

Appendix D: New Zealand Wine Tourism Survey 2003

WINERY PROFILE

1. Winery Location

In which winery region are you located? *(Please tick ONE)*

Auckland

Bay of Plenty

Canterbury

Central Otago

Gisborne

Hawke's Bay

Marlborough

Nelson

Northland

Waiheke Island

Waikato

Waipara

Wairarapa

Other *(please specify)* _____

2. Winery Age

When were grapes first planted in your vineyard?

Year _____

When was the first commercial release of your wine?

Year _____

When was your winery first opened to visitors?

Year _____

3. Employees

Please indicate the total number of full-time, part time and casual workers employed by your winery over the 2003 tax year (1 April 2002-31 March 2003). Please include yourself in these figures.

Fulltime _____

Part-time _____

Casual _____

4. Production

Please indicate your total wine production in units of litres. _____ litres.

4.a. Is your wine made on site? *(Please tick)*

Yes

No

If no, please state where you have your wine made.

5. How would you describe the ownership status of your winery? *(Please tick ONE)*

Sole proprietor

Public company

Partnership

Trust

Private company

other _____

6. Turnover

Please indicate the TOTAL amount received from the sale of all products and services at your winery over the 2003 tax year (1 April 2002-31 March 2003). Please include sales of wine, food, accommodation and other products and services offered at your winery. Please note the answers will be kept *strictly confidential* and will be amalgamated and used for statistical purposes only. (Please tick ONE)

Less than \$50 000 \$50 - \$99 999 \$100 - \$249 999 \$250 - \$499 999

\$500 - \$750 000 Over \$750 000 prefer not to state

7. All Sales

What proportion of your winery's total income falls into the following categories? (Please estimate)

Cellar door wine sales _____% Mail order wine sales _____% Other domestic wine sales _____%

Export wine sales _____% Accommodation _____% Other products and services _____%

8. Now thinking about the "Other domestic wine sales" only

What proportion of your domestic wine sales fall into the following categories? (Please estimate)

Specialist wine stores _____% Supermarkets _____% Wine clubs _____%

Restaurants _____% Farmers markets _____%

Other outlets (please specify) _____%

9. Cellar door sales

Do you offer cellar door sales?

Extre- Some Not Not at Don't
mely Very what very all know

Yes ⇐ If yes, how important are they to your business?

No ⇐ If no, are you intending to offer cellar door sales in the future?

Yes No

10. Opening hours

When is your winery open to visitors? (Please indicate opening hours) Eg. Jan 9am-6pm, July closed

Jan _____ Feb _____ March _____ April _____ May _____ June _____
July _____ Aug _____ Sept _____ Oct _____ Nov _____ Dec _____

11. Tasting fees

Do you charge tasting fees? Yes, (please answer question 11.a) No, (if no, continue to question 12)

11.a. If yes, do you refund on purchase? No

Yes, the full amount

Yes, a partial amount (please specify) _____

12. Local sales

Apart from cellar door sales, are your wines available locally? Yes No

If yes, where?

Cafés or restaurants

Pubs, taverns or wine bars

Supermarkets

Specialist wine stores

Accommodation

Other (please specify) _____

13. Products, services and facilities

What types of products and services do you offer visitors to your winery? (Please tick ALL that apply)

A. Products

Company branded merchandise

Promotional material

Regional merchandise

Company branded promotional material

Regional promotional material

Other wine merchandise (please specify) _____

B. Services and Food

ρ Winery tours ρ Vineyard tours ρ Wine tasting ρ Tasting or snack food

ρ Host functions ρ Host conferences ρ Restaurant ρ Accommodation

ρ Events / festivals ρ Entertainment ρ Other services or food services

C. Facilities

ρ Wine cave ρ Barrel hall ρ Winemaking demonstrations

ρ Historical displays ρ Conference facilities ρ Children’s playground

ρ BBQ area ρ Picnic or entertainment area ρ Other facilities (*please specify*) _____

D. Services for people who have disabilities

Wheelchair access to ⇐ ρ Tasting room ρ Winery ρ Vineyard

ρ Restaurant/wine bar ρ Toilets

Services for people who have visual or hearing impairments ρ Yes, (*please specify*) _____

_____ ρ No

Other services for people who have disabilities (*please specify*) _____

VISITOR PROFILE

For questions 14 through 16 please indicate the estimated proportion of your visitors who you think would fit into each of these categories. For these questions your best estimate is sufficient.

14. Age

What proportion of your visitors fall into the following age groups?

Under 18 years _____ % 18-29 years _____ % 30-39 years _____ % 40-49 years _____ %
 50-59 years _____ % 60 + years _____ %

15. Gender

What proportion of your visitors are male and what proportion are female?

Male _____% Female _____%

The following table is a more comprehensive version of the questions you have answered above. If you are able, please complete this also. An example is given on the top line of the table.

<i>Under 18 years</i>			
18-29 years			
30-39 years			
40-49 years			
50-59 years			
60 years plus			

16. Visitor Origin

What proportion of your visitors are from New Zealand and what proportion are from overseas?

New Zealand Visitors? _____% Overseas Visitors? _____%

17. Wine Tourism Groups

Does your vineyard form part of any commercial wine tour? ρ Yes ρ No

If yes, what types of tours visit your vineyard? (Please tick)

ρ Self-guided tours ρ Local tour operator(s) ρ Travel company(s)

18. Biosecurity

Does your vineyard have biosecurity measures in place with respect to wine tourists?

Yes (Please specify) _____ No

19. Visitor Information Collection

How do you collect information about the number of people visiting your winery? (Please tick as many as applicable)

<input type="checkbox"/> No systematic way of collecting the information	<input type="checkbox"/> Till receipts
<input type="checkbox"/> Mailing list specify) _____	<input type="checkbox"/> Counters (please specify)
<input type="checkbox"/> Surveys _____	<input type="checkbox"/> Other (please specify)

20. Number of visitors

Please estimate the number of visits to your winery for each month over the 2003 tax year (1 April 2002-31 March 2003). If records are unavailable, please provide your best estimate.

April 2002	_____	May 2002	_____	June 2002	_____
July 2002	_____	Aug 2002	_____	Sept 2002	_____
Oct 2002	_____	Nov 2002	_____	Dec 2002	_____
Jan 2003	_____	Feb 2003	_____	Mar 2003	_____

21. Reasons for visit

What do you consider to be the main reason visitors come to your winery? (Please tick as many as applicable)

<input type="checkbox"/> Buying wines	<input type="checkbox"/> Tasting wines	<input type="checkbox"/> Learning about wines	<input type="checkbox"/> Winery tour
<input type="checkbox"/> Meeting the wine maker	<input type="checkbox"/> Organic wines	<input type="checkbox"/> Socialising	<input type="checkbox"/> Picnic or BBQ
<input type="checkbox"/> A day out	<input type="checkbox"/> Relaxation	<input type="checkbox"/> Festivals or events	
<input type="checkbox"/> Other (please specify) _____			

22. Visitor attributes

How would you describe the majority of visitors to your winery? *(Please tick)*

Wine lovers... with advanced knowledge of wine

Wine interested... with intermediate knowledge of wine

Wine curious... with basic or no knowledge of wine

23. Visitor Information

Do you believe that information on visitor numbers and characteristics would be, or is useful to your business operation? *(Please circle)*

Strongly Agree Unsure Disagree Strongly

Agree

disagree

TOURISM AND MARKETING

24. Wine and Food Festivals

What, if any, wine and food festivals did you participate in over the 2003 tax year (1 April 2002—31 March 2003) *Please tick as many as is appropriate*

<input type="checkbox"/> None	<input type="checkbox"/> New Zealand Wine and Food Festival (London)
<input type="checkbox"/> Akaroa French Festival	<input type="checkbox"/> Organic River Festival (Levin)
<input type="checkbox"/> Bay of Islands Jazz and Blues Festival	<input type="checkbox"/> Pinot at Cloudy Bay
<input type="checkbox"/> Bluff Oyster and Southland Seafood Festival	<input type="checkbox"/> Savour New Zealand (Christchurch)
<input type="checkbox"/> BMW Marlborough Wine Festival	<input type="checkbox"/> Taranaki Wine and Food Festival
<input type="checkbox"/> Canterbury Wine and Food Festival	<input type="checkbox"/> Taste Gisborne Festival
<input type="checkbox"/> Capital Wine and Food Festival	<input type="checkbox"/> Taste Northland
<input type="checkbox"/> Central Otago Wine and Food Festival	<input type="checkbox"/> Taste Otago
<input type="checkbox"/> Christmas Country Fete (Culverden, Nth Canterbury)	<input type="checkbox"/> Taste the Regions Wines (Napier)
<input type="checkbox"/> Diners Club Devonport Food and Wine Festival	<input type="checkbox"/> Tauranga Boutique Food and Wine Festival
<input type="checkbox"/> "Good Oil" Weekend (Hawkes Bay)	<input type="checkbox"/> The Village Festival (Havelock North)
<input type="checkbox"/> Harvest Hawkes Bay Wine and Food Extravaganza	<input type="checkbox"/> Toast Martinborough
<input type="checkbox"/> Hokitika Wildfoods Festival	<input type="checkbox"/> Vintage Alfresco
<input type="checkbox"/> Kumeu Food and Wine Festival	<input type="checkbox"/> Waiheke Wine Festival
<input type="checkbox"/> Hooked on Seafood (Nelson)	<input type="checkbox"/> Waipara Wine and Food Celebration
<input type="checkbox"/> Kaikoura Seafest	<input type="checkbox"/> Wairarapa Wine and Food Festival
<input type="checkbox"/> McCullochs Gisborne Wine and Food Festival	<input type="checkbox"/> Waitakere Spring Wine Festival
<input type="checkbox"/> Manawatu Wine and Food Festival	<input type="checkbox"/> WETA Wine and Food Festival
<input type="checkbox"/> Marlborough Culinary Fare	<input type="checkbox"/> Other (<i>Please specify FESTIVALS and DATES</i>)
<input type="checkbox"/> Marlborough Winter Wine Weekend	
<input type="checkbox"/> Martinborough Around the Vines	
<input type="checkbox"/> New Zealand Organic Wine and Food Festival(Oamaru)	

25. WINERY ATTRIBUTES

How important are the following attributes of **YOUR WINERY** in attracting visitors? *(Please circle ONE)*

	Extremely	Very	Somewhat	Not	Not	Don't
				very	at all	know
Winery	1	2	3	4	5	DK
Tasting area	1	2	3	4	5	DK
Atmosphere and setting	1	2	3	4	5	DK
Quality of wines	1	2	3	4	5	DK
Wine awards received	1	2	3	4	5	DK
Knowledge of your wines	1	2	3	4	5	DK
Personalised and friendly service	1	2	3	4	5	DK
Meeting the winemaker	1	2	3	4	5	DK
Food	1	2	3	4	5	DK
Location	1	2	3	4	5	DK
Whole experience	1	2	3	4	5	DK
Other <i>(please specify)</i> _____	1	2	3	4	5	

26. REGIONAL ATTRIBUTES

How important are the following attributes of **YOUR WINE REGION** in attracting visitors to your winery?
(Please circle ONE)

	Extremely	Very	Somewhat	Not	Not	Don't
				very	at all	know
Prestige or character of district DK		1	2	3	4	5
Quality of wines	1	2	3	4	5	DK
Other attractions and activities 5 DK			1	2	3	4
Festivals and events	1	2	3	4	5	DK
Scenery	1	2	3	4	5	DK
Size	1	2	3	4	5	DK
Proximity to major city or tourist destination	1	2	3	4	5	DK
(Please specify PLACE) _____						
Other (please specify)	1	2	3	4	5	DK

27. INFORMATION SOURCES

How important are the following information media for attracting visitors to **YOUR WINERY**?

Please indicate whether or not you use the media, and if used, how useful you feel it is.

(Please circle)

	Use	Extremely	Very	Somewhat	Not	Not	Don't
					very	at all	know

Wine shows	ρ Yes	ρ No	1	2	3	4	5	DK
Wine and food festivals	ρ Yes	ρ No	1	2	3	4	5	DK
Wine club	ρ Yes	ρ No	1	2	3	4	5	DK
Retail trade	ρ Yes	ρ No	1	2	3	4	5	DK

Tourism New Zealand	ρ Yes	ρ No	1	2	3	4	5	DK
Local or regional tourism organisation	ρ Yes	ρ No	1	2	3	4	5	DK
Visitor information sources	ρ Yes	ρ No	1	2	3	4	5	DK
Word of mouth	ρ Yes	ρ No	1	2	3	4	5	DK
New Zealand Winegrowers	ρ Yes	ρ No	1	2	3	4	5	DK
Mailing list	ρ Yes	ρ No	1	2	3	4	5	DK
Magazines	ρ Yes	ρ No	1	2	3	4	5	DK
Newspapers	ρ Yes	ρ No	1	2	3	4	5	DK
Radio	ρ Yes	ρ No	1	2	3	4	5	DK
Television	ρ Yes	ρ No	1	2	3	4	5	DK
Website	ρ Yes	ρ No	1	2	3	4	5	DK
Guidebooks	ρ Yes	ρ No	1	2	3	4	5	DK
Internet promotion	ρ Yes	ρ No	1	2	3	4	5	DK
Brochures	ρ Yes	ρ No	1	2	3	4	5	DK
Other (please specify) _____			1	2	3	4	5	DK

28. TOURISM AND YOUR WINERY

What is your attitude towards tourism activity at **YOUR WINERY**?

(Please circle)

	Strongly Disagree	Agree	Unsure	Disagree	
Cellar door visitors do not buy much wine	1	2	3	4	5
Tourists are valuable	1	2	3	4	5
Tourism attracts a wide range of customers to my winery	4	5	1	2	3
Tourism provides significant marketing opportunities	1	2	3	4	5

Tourism positively impacts the sales of my wine offshore	1	2	3	4
5				
Time spent with visitors to my winery is valuable	1	2	3	4
5				
Tourism does not contribute greatly to my business success	1	2	3	4
5				
The overall benefits of tourism outweigh the negative impacts	1	2	3	4
5				
Tourism does not attract the kind of visitors I want to my winery		1	2	3
4	5			

29. TOURISM AND YOUR REGION

What is your attitude towards tourism and tourism development in **YOUR REGION**?

(Please circle)

	Strongly	Agree	Unsure	Disagree
Strongly				
		Agree		
Disagree				
The tourism industry is important to the wine industry as a whole	1	2	3	
4	5			
Promoting tourism in the region brings more visitors to my winery	1	2	3	4
5				
I believe that tourism in the region should be actively encouraged				
in the wine industry	1	2	3	4
5				
The wine industry has much to offer the tourism industry		1	2	3
4	5			
The tourism industry has much to offer the wine industry		1	2	3
4	5			

30. TOURISM AND YOUR WINE

What is your attitude towards tourism and wine sales?

(Please circle)

	Strongly	Agree	Unsure	Disagree
Tourism enhances product/brand awareness	1	2	3	4
Tourism helps to differentiate my wine from others	1	2	3	4
Tourism helps to develop mail order sales	1	2	3	4
Tourism helps to educate my customers		1	2	3

31. TOURISM PROMOTION

The following is a list of tourist promotions in your region. Which of these have been successful in attracting visitors to **YOUR WINERY**? (Please circle ONE)

	Extremely	Very	Somewhat	Not	Not	Don't
				very	at all	know
Regional wineries' brochure	1	2	3	4	5	DK
Holiday and travel shows	1	2	3	4	5	DK
Wine and food festivals		1	2	3	4	5
Tourism awards		1	2	3	4	5
Media familiarisation	1	2	3	4	5	DK
Public tastings	1	2	3	4	5	DK
Wine exhibitions/shows		1	2	3	4	5
Regional tourist guides		1	2	3	4	5
Winery based events	1	2	3	4	5	DK
Wine trail or road signage	1	2	3	4	5	DK

Regional website	1	2	3	4	5	DK
Other (please specify)	1	2	3	4	5	DK

31.a. Who do you feel should be primarily responsible for **PROMOTING** wine tourism?
(Please rank in order of importance, 1= MOST IMPORTANT)

Regional tourism organisation _____ Individual wineries _____

Wine industry associations _____ Other (please specify) _____

32. Alliances

What type of relationship, if any, **DO YOU HAVE** with the following organisations?

(Please circle corresponding number for each question

or state other relationship)

None Contact as Member Co-operative Other

Required marketing or relationship promotion

(please state)

a) Tourism New Zealand	1	2	3	4	_____
b) Regional Tourism Organisation	1	2	3	4	_____
c) New Zealand Winegrowers	1	2	3	4	_____
d) NZGVIG	1	2	3	4	_____
e) Regional Grape Growers Organisation	1	2	3	4	_____
f) NZ Society of Viticulture and Oenology	1	2	3	4	_____
g) Regional Wine Organisation	1	2	3	4	_____
h) Visitor Information Centres	1	2	3	4	_____
i) Tourism Industry Association of NZ	1	2	3	4	_____

j) 100% Pure New Zealand	1	2	3	4	_____
<hr/>					
k) Business Development Boards	1	2	3	4	_____
<hr/>					
l) Local Council	1	2	3	4	_____
<hr/>					
m) Regional Council	1	2	3	4	_____
<hr/>					
n) Trade New Zealand	1	2	3	4	_____
<hr/>					
o) Chamber of Commerce	1	2	3	4	_____
<hr/>					
p) Industry New Zealand	1	2	3	4	_____
<hr/>					
q) Ministry of Economic Development	1	2	3	4	_____
<hr/>					
r) Other Central Government Agencies	1	2	3	4	_____
<hr/>					
s) Hospitality associations	1	2	3	4	_____
<hr/>					
t) Local food and wine promotion					
			1	2	3
		group/network			4
<hr/>					
u) Other (please state)	1	2	3	4	_____
<hr/>					

OTHER PROMOTIONS

What other promotional activities would you like to see conducted to promote tourism to the wineries in your region?

Do you have any comments on wine tourism that have not been covered by this survey, or that you feel are particularly important for your winery, your wine region, or wine tourism in New Zealand?

Your completion of this questionnaire is greatly appreciated. Your response will assist in helping us understand winery characteristics and the emphasis New Zealand wineries place on wine tourism.

NOTE: If you wish to be included in the draw outlined in the covering letter, and/or receive a copy of the results of this research, please ensure you complete the personal details section accompanying this questionnaire.

PERSONAL DETAILS

PLEASE NOTE: All responses will be treated in the strictest confidence. Any results published will be in aggregate form only, thus ensuring the privacy and protection of all respondents, both individually and within a particular region.

Do you wish to receive a copy of the survey results? Yes No

If yes, how do you wish to receive them? Post Email (please state email address)

Book and book voucher draw

Do you wish to be included in the draw for the book and book voucher? Yes No

Further surveys

Would you be willing to participate in further surveys Yes No

Your Name

Your organisation

Your title or
position

Once again, thank you for completing this questionnaire. It is hoped that at some time in the future this research will benefit both yourselves and the wine industry as a whole.

Appendix E: New Zealand Wine Tourism Survey 2010

Q1 WINERY PROFILE

1. Winery Location In which winery region are you located? (Please select ONE)

- Northland/Matakana (1)
- Waiheke Island (2)
- Auckland (3)
- Waikato (4)
- Bay of Plenty (5)
- Gisborne (6)
- Hawkes Bay (7)
- Wairarapa/Martinborough (8)
- Marlborough (9)
- Waipara (10)
- Canterbury (non-Waipara) (11)
- Central Otago (12)
- Great Barrier Island (13)
- Nelson (14)
- Other (please specify) (15) _____

Q2 2. Winery Age

What year were grapes first planted in your vineyard? (1)

What year was the first commercial release of your wine? (2)

When was your winery first opened to visitors? (3)

Q3 3. Employees Please indicate the total number of full time, part time and casual workers employed by your winery over the 2009 tax year (1st April 2009 - 31st March 2010). Please include yourself in these figures.

Full time (1)

Part time (2)

Casual (3)

Q4 4. Annual wine production

Please indicate your total annual wine production in units of litres. (1)

Q5 5. Is your wine made on site?

- Yes (1)
- No (2)

Q6 6. How would you describe the ownership status of your winery? (Please select ONE)

- Sole proprietor (1)
- Partnership (2)
- Private company (3)
- Public company (4)
- Trust (5)
- Other (if so, please specify) (6) _____

Q7 7. Turnover Please indicate the TOTAL amount received from the sale of all products and services at your winery over the 2009 tax year (1st April 2009 - 31st March 2010). Please include sales of wine, food, accommodation and other products and services offered at your winery. Please note the answers will be kept strictly confidential and will be amalgamated and used for statistical purposes only (Please select ONE option)

- Less than \$50,000 (1)
- \$50,000 - \$99,999 (2)
- \$100,000 - \$249,999 (3)
- \$250,000 - \$499,999 (4)
- \$500,000 - \$750,000 (5)
- Over \$750,000 (6)
- Prefer not to state (7)

Q8 8. All Sales What proportion of your winery's total income falls into the following categories? (Please estimate)

- Cellar door wine sales (%) (1)
- Internet order wine sales (%) (2)
- Postal mail order wine sales (%) (3)
- Other domestic wine sales (%) (4)
- Export wine sales (%) (5)
- Accommodation (%) (6)
- Other products and services (%) (7)

Q9 Now thinking about "Other domestic wine sales" only: 9. What proportion of your domestic wine sales fall into the following categories (Please estimate)

- Specialist wine stores (%) (1)
- Supermarkets (%) (2)
- Wine clubs (%) (3)
- Restaurants (%) (4)
- Farmers markets (%) (5)
- Other outlets (%) (6)

Q10a. Cellar door sales Do you offer cellar door sales?

- Yes (1)
- No (2)

Q10b . If you do offer cellar door sales, then:

	Extremely (1)	Very (2)	Somewhat (3)	Not very (4)	Not at all (5)	Don't know (6)
How important are they to your business? (1)	<input type="radio"/>					

Q10c. If you don't currently offer cellar door sales, are you intending to offer them in the future?

- Yes (1)
- No (2)

Q11 . Opening hours When is your winery open to visitors? (Please indicate opening hours, e.g. January 9am - 6pm, July closed, or by appointment only)

- January (1)
- February (2)
- March (3)
- April (4)
- May (5)
- June (6)
- July (7)
- August (8)
- September (9)
- October (10)
- November (11)
- December (12)

Q12. Tasting fees Do you charge tasting fees?

- Yes (1)
- No (if no, please continue to question 13) (2)

Q12a . If you do charge tasting fee, please state the proportion that is refunded in a dollar (\$) amount upon purchase.

Amount refunded: (1)

Q13a. Local sales Apart from cellar door sales, are your wines available locally?

- Yes (1)
- No (if no please continue to Question 14) (2)

Q13b . If your wines are available locally, then where can they be purchased from?

- Cafes or restaurants (1)
- Pubs, taverns or wine bars (2)
- Supermarkets (3)
- Specialist wine stores (4)
- Accommodation (5)
- Other wine merchandise (please specify) (6) _____

Q14 Products

What types of products do you offer visitors to your winery? (Please select ALL that apply)

- Company branded merchandise (1)
- Regional merchandise (2)
- Regional promotional material (3)
- Promotional material (4)
- Company branded promotional material (5)
- Other wine merchandise (please specify) (6) _____

Q15 Services

What types of services do you offer visitors to your winery? (Please select ALL that apply)

- Winery tours (1)
- Vineyard tours (2)
- Wine tasting (3)
- Tasting or snack food (4)
- Host functions (5)
- Host conferences (6)
- Restaurant (7)
- Accommodation (8)
- Events / festivals (9)
- Entertainment (10)
- Other services or food services (11)

Q16. Facilities

What facilities do you offer visitors to your winery? (Please select ALL that apply)

- Wine cave (1)
- Barrel hall (2)
- Winemaking demonstrations (3)
- Historical displays (4)
- Conference facilities (5)
- Children's playground (6)
- BBQ area (7)
- Picnic or entertainment area (8)
- Other facilities (please specify) (9) _____

Q17a. Services for people who have disabilities

Do you offer wheelchair access to: (Please select ALL that apply)

- Tasting room (1)
- Winery (2)
- Vineyard (3)
- Restaurant/winebar (4)
- Toilets (5)

Q17b Do you offer services for people who have visual or hearing impairments?

- Yes (1)
- No (2)

Q17b If you answered yes, please specify what these services are:

Q17c. Do you offer any other services for people who have disabilities? (please specify)

Q18 For questions 18 through to 20 of this section, please indicate the estimated proportion of your visitors who you think would fit into each of these categories. For these questions your best estimate is sufficient. 18. Age What proportion of your visitors fall into the following age groups?

- Under 18 years (%) (1)
- 18 - 29 years (%) (2)
- 30 - 39 years (%) (3)
- 40 - 49 years (%) (4)
- 50 - 59 years (%) (5)
- 60 + years (6)

Q19. Gender

What proportion of your visitors are male and what proportion are female?

- Male (%) (1)
- Female (%) (2)

Q20. Visitor Origin

What proportion of your visitors are from New Zealand and what proportion are from overseas?

- New Zealand Visitors? (%) (1)
- Overseas Visitors? (%) (2)

Q21a. Wine Tourism Groups

Does your vineyard form part of any commercial wine tour?

- Yes (1)
- No (if no, please go to Question 22) (2)

Q21b 21b. If your vineyard forms part of a commercial wine tour, what types of tours visit your vineyard? (Please select ALL that apply)

- Self-guided tours (1)
- Local tour operator(s) (2)
- Travel company(s) (3)

VISITOR INFORMATION COLLECTION

Q22. How do you collect information about the number of people visiting your winery? (Please tick as many as applicable)

- No systematic way of collecting the information (1)
- Mailing list (2)
- Surveys (3)
- Till receipts (4)
- Counters (5)
- Other (please specify) (6) _____

Q23. Number of visitors Please estimate the number of visits to your winery for each month over the 2009 tax year (1st April 2009 - 31st March 2010). If records are unavailable, please provide your best estimate.

- April 2009 (1)
- May 2009 (2)
- June 2009 (3)
- July 2009 (4)
- August 2009 (5)
- September 2009 (6)
- October 2009 (7)
- November 2009 (8)
- December 2009 (9)
- January 2010 (10)
- February 2010 (11)
- March 2010 (12)

Q24 . Reasons for visit What do you consider to be the main reason visitors come to your winery? (Please tick as many as applicable)

- Buying wines (1)
- Tasting wines (2)
- Learning about wines (3)
- Winery tour (4)
- Meeting the wine maker (5)
- Organic wines (6)
- Socialising (7)
- Picnic or BBQ (8)
- A day out (9)
- Relaxation (10)
- Festivals or events (11)
- Other (please specify) (12) _____

Q25. Visitor attributes

How would you describe the majority of visitors to your winery? (Please give a percentage estimate in the box provided. The sum total of ALL percentages must add up to 100%)

Wine lovers...with advanced knowledge of wine (1)

Wine interested...with intermediate knowledge of wine (2)

Wine curious...with basic or no knowledge of wine (3)

Q26. Visitor Information

Do you believe that information on visitor numbers and characteristics would be, or is useful to your business operation? (Please select ONE option)

	Strongly Agree (1)	Agree (2)	Unsure (3)	Disagree (4)	Strongly Disagree (5)
I believe that the information on visitor numbers and characteristics would be useful/or is useful to my business operation (1)	<input type="radio"/>				

ENVIRONMENTAL ISSUES, INNOVATION AND YOUR WINERY

SUSTAINABILITY

27a. How important do you believe that sustainability practices are for the New Zealand wine industry? (Please select ONE of the following options)

	Strongly Disagree (1)	Disagree (2)	Unsure (3)	Agree (4)	Strongly Agree (5)
I believe that sustainability practices are important for the New Zealand wine industry (1)	<input type="radio"/>				

Q27b.

Do you believe that sustainability practices employed by your winery provide an important source of competitive advantage? (Please select ONE of the following options)

	Strongly Disagree (1)	Disagree (2)	Unsure (3)	Agree (4)	Strongly Agree (5)
I believe that sustainability practices employed by my winery provide an important source of competitive advantage (1)	<input type="radio"/>				

Q27c . During the last two financial years, what were the reasons that your winery chose to employ sustainability practices? (Please select as many options as applicable)

- To increase revenue (1)
- To reduce costs (2)
- To increase market share (3)
- To reduce energy consumption (4)
- To reduce environmental impact (5)
- To establish/exploit new market opportunities (6)
- To improve productivity (7)
- To attract visitors to my winery (8)
- Other (please specify) (9) _____

Q27d. Is your winery an accredited member of Sustainable Wineries New Zealand (SWNZ)?

- Yes (1)
- No (2)

BIOSECURITY

Q28a. Does your vineyard have biosecurity measures in place with respect to wine tourists?

- Yes (1)
- No (if you answered no, please go to Question 28b) (2)

Q28aa If you answered yes to this question, please specify the measures you have in place:

Q28b . Are visitors allowed to wander freely amongst the vines on your vineyard(s)?

- Yes (1)
- No (2)

Q28c. Do you believe that your winery currently receives adequate information regarding biosecurity threats from Government agencies? (Please select ONE of the following options)

	Strongly Disagree (1)	Disagree (2)	Unsure (3)	Agree (4)	Strongly Agree (5)
I believe that my winery currently receives adequate information regarding biosecurity threats from Government agencies (1)	<input type="radio"/>				

Q28d. Do you believe that your winery currently has an effective strategy in place to deal with any potential biosecurity threats? (Please select ONE of the following options)

	Strongly Agree (1)	Agree (2)	Unsure (3)	Disagree (4)	Strongly Disagree (5)
I believe that my winery currently has an effective strategy in place to deal with any potential biosecurity threats (1)	<input type="radio"/>				

Q28e. How do you currently receive information regarding potential biosecurity threats to your winery? (Please select as many as applicable)

- Ministry of Agriculture and Forestry (MAF) (1)
- New Zealand Winegrowers (2)
- Local or regional councils (3)
- Crown Research Institutes (4)
- Universities or polytechnics (5)
- Other competing businesses within the wine industry (6)
- Websites (7)
- Television (8)
- Newspapers (9)
- Word of mouth (10)
- Other (please specify) (11) _____

Q28f Do you think that biosecurity should be part of the Sustainable Wineries New Zealand (SWNZ) scheme?

- Yes (1)
- No (2)

Q29a INNOVATION

For the purpose of this survey innovation is broadly defined. It includes the development or introduction of any new or significantly improved activity for your winery. This includes products, processes and methods that your winery was first to develop and those that have been adopted from other organisations. 29a. During the last two financial years, did your winery introduce on to the market any new or significantly improved goods or services? (Don't include the selling of new goods or services wholly produced and developed by other businesses)

- Yes (1)
- No (2)

Q29b. Were any of these new or significantly improved goods or services: (Please select ALL that apply)

- Developed by this business (1)
- Developed by this business in partnership with others (2)
- Obtained from others and significant improvements were made by this business (3)
- Obtained from others and NO significant improvements were made by this business (4)

Q29c. For the last financial year, please select the ONE option that best estimates the percentage of sales for this winery that came from those new or significantly improved goods or services.

- Zero (1)
- 10% or less (2)
- 20% or less (3)
- 30% or less (4)
- 40% or less (5)
- 41% - 100% (6)
- Don't know (7)

Q30a. During the last two financial years, did your winery introduce on to the market any new or significantly improved operational processes (i.e. methods of producing or distributing goods or services)

- Yes (1)
- No (2)

Q30b. Were any of those new or significantly improved operational processes: (Please select ALL that apply)

- Developed by this business (1)
- Developed by this business in partnership with others (2)
- Obtained from others and significant improvements were made by this business (3)
- Obtained from others and NO significant improvements were made by this business (4)

Q31a. During the last two financial years, did your winery implement any new or significantly improved organisational/managerial processes (i.e. significant changes in your winery's strategies, structures or routines)?

- Yes (1)
- No (2)

Q31b. Were any of these new or significantly improved organisational/managerial processes: (Please select ALL that apply)

- Developed by this business (1)
- Developed by this business in partnership with others (2)
- Obtained from others and significant improvements were made by this business (3)
- Obtained from others and NO significant improvements were made by this business (4)

Q32a. During the last two financial years, did your winery implement any new or significantly improved sales or marketing methods which were intended to either increase the appeal of goods or services for specific market segments or to gain entry to new markets?

- Yes (1)
- No (2)

Q32b. Were any of those new or significantly improved sales or marketing methods: (Please select ALL that apply)

- Developed by this business (1)
- Developed by this business in partnership with others (2)
- Obtained from others and significant improvements were made by this business (3)
- Obtained from others and NO significant improvements were made by this business (4)

Q33. Reasons for innovation During the last two financial years, what were the reasons that your winery tried to innovate?

	Yes (1)	No (2)	Don't know (3)
To improve productivity (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To increase productivity (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To reduce costs (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To increase responsiveness to customers (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To increase market share (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To establish/exploit new market opportunities (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To improve work safety standards (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To reduce energy consumption (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To reduce environmental impact (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To replace goods and services being phased out (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q34. Sources of ideas or information for innovation During the last two financial years, with what types of businesses or institutions did this winery find any of the following as a source of ideas or information for innovation?

	Yes (1)	No (2)	Don't know (3)
New staff (those appointed in the last two years) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Existing staff (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other businesses within the business group (e.g. subsidiaries or parent companies) (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Customers (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suppliers (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competitors and other businesses from the same industry (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Businesses from other industries (not including customers or suppliers) (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional advisors, consultants, banks or accountants (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Books, journals, patent disclosures or the Internet (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine shows, festivals or conferences (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry or employer organisations (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Universities or polytechnics (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Crown Research Institutes, other research institutes, or research associations (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government agencies (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q35. Activities to support innovation During the last two financial years, did your winery do any of the following:

	Done to support innovation (1)	Done, though NOT to support innovation (2)	Not done (3)	Don't Know (4)
Introduce a new variety of grape (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use new viticultural techniques (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acquire new machinery and equipment (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acquire new computer hardware and software (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acquire other knowledge (e.g. outsourcing for new viticultural techniques or other intellectual property) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implement new business strategies or management techniques (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implement organisational restructuring (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Design (e.g. graphic design on labelling of bottles) (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market the introduction of new goods and services (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market research (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make significant changes to existing market strategies (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employee training (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q36. Cooperative arrangements

In the following questions cooperative arrangements mean actively participating with another organisation or individual in activities for the purpose of innovation. During the last two financial years, did this business have any cooperative arrangements for the purpose of innovation?

- Yes (1)
- No (2)

Q 37. During the last two financial years, with what types of business or institutions did this business have those cooperative arrangements? (Please select ALL the options that apply)

	NZ (1)	Overseas (2)	No co-operation (3)
Customers (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppliers (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Businesses from other industries (not including customers or suppliers) (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitors and other businesses from the same industry (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other businesses within the business group (e.g. subsidiaries or parent companies) (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Universities or polytechnics (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crown Research Institutes, other research institutes, or research associations (7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q38. During the last two financial years, in which activities did this business engage in cooperative arrangements, as defined in Question 36?

- Joint marketing or distribution (1)
- Joint production (2)
- Joint R & D (3)
- Joint prototype development (4)
- Joint training (5)
- Other (6)

Q39. During the last two financial years, for what reasons did this business engage in cooperative arrangements, as defined in Question 36?

- Sharing costs (1)
- Spreading risk (2)
- Access to R & D (3)
- Access to production processes (4)
- Access to management skills (5)
- Access to new distribution channels (6)
- Access to work practices (7)
- Access to financial resources (8)
- Access to new markets (9)
- Access to new suppliers (10)
- Other (11)

TOURISM AND MARKETING

Q40. Wine and Food Festivals

What, if any, wine and food festivals on this comprehensive list did you participate in over the 2009 tax year (1st April 2009 - 31st March 2010)? Please select as many as is appropriate.

- None (1)
- Akaroa French Festival (2)
- Bay of Islands Jazz and Blues Festival (3)
- Bluff Oyster and Southland Seafood Festival (4)
- BMW Marlborough Wine Festival (5)
- Canterbury Wine and Food Festival (6)
- Capital Wine and Food Festival (7)
- Central Otago Wine and Food Festival (8)
- Christmas Country Fete (Culverden, Nth. Canterbury) (9)
- Diners Club Devonport Wine and Food Festival (10)
- Gisborne Wine and Food Festival (11)
- "Good Oil" Weekend (Hawkes Bay) (12)
- Harvest Hawkes Bay Wine and Food Extravaganza (13)
- Hokitika Wildfoods Festival (14)
- Kumeu Food and Wine Festival (15)
- Hooked in Seafood (Nelson) (16)
- Kaikoura Seafest (17)
- McCullochs Gisborne Wine and Food Festival (18)
- Manawatu Wine and Food Festival (19)
- Marlborough Culinary Fare (20)
- Marlborough Winter Wine Weekend (21)
- Martinborough Around the Vines (22)
- Midlands Hawkes Bay Charity Wine Auction (23)
- Nelson Aromatics Symposium (24)
- New Zealand Syrah Symposium (Hawkes Bay) (25)
- New Zealand Cabernet Merlot Symposium (Hawkes Bay) (26)
- New Zealand Organic Wine and Food Festival (Oamaru) (27)
- New Zealand Wine and Food Festival (London) (28)
- Organic River Festival (Levin) (29)
- Pinot at Cloudy Bay (30)
- Savour New Zealand (Christchurch) (31)
- Taranaki Wine and Food Festival (32)
- Taste Gisborne Festival (33)
- Taste Northland (34)
- Taste Otago (35)
- Taste the Region's Wines (Napier) (36)
- Tauranga Boutique Food and Wine Festival (37)
- The Village Festival (Havelock North) (38)
- Toast Martinborough (39)
- Vintage Alfresco (40)

- Waiheke Wine Festival (41)
- Waipara Wine and Food Festival (42)
- Wairarapa Wine and Food Festival (43)
- Waitakere Spring Wine Festival (44)
- Wine Marlborough Festival (45)
- Other (Please specify FESTIVALS and DATES) (46) _____

Q41. Winery Attributes

How important are the following attributes of YOUR WINERY in attracting visitors? (Please select ONE option)

	Extremely (1)	Very (2)	Somewhat (3)	Not very (4)	Not at all (5)	Don't know (6)
Winery (1)	<input type="radio"/>					
Tasting area (2)	<input type="radio"/>					
Atmosphere and setting (3)	<input type="radio"/>					
Quality of wines (4)	<input type="radio"/>					
Wine awards received (5)	<input type="radio"/>					
Knowledge of your wines (6)	<input type="radio"/>					
Personalised and friendly service (7)	<input type="radio"/>					
Meeting the winemaker (8)	<input type="radio"/>					
Food (9)	<input type="radio"/>					
Location (10)	<input type="radio"/>					
Quality of the environment (11)	<input type="radio"/>					
Whole experience (12)	<input type="radio"/>					
Other (13)	<input type="radio"/>					

Q41aa If you selected other, please specify what these attribute(s) are:

Q42. Regional Attributes How important are the following attributes of YOUR WINE REGION in attracting visitors to your winery? (Please select ONE option)

	Extremely (1)	Very (2)	Somewhat (3)	Not very (4)	Not at all (5)	Don't know (6)
Prestige or character of the district (1)	<input type="radio"/>					
Quality of the wines (2)	<input type="radio"/>					
Quality of the environment (3)	<input type="radio"/>					
Other attractions and activities (4)	<input type="radio"/>					
Festivals and events (5)	<input type="radio"/>					
Scenery (6)	<input type="radio"/>					
Size (7)	<input type="radio"/>					
Proximity to major city or tourist destination (8)	<input type="radio"/>					
Other (9)	<input type="radio"/>					

Q42aa If you selected OTHER, please specify what these attribute(s) are:

Q43a. Information Sources Please indicate whether or not you use the following media for attracting visitors to YOUR WINERY.

	Yes (1)	No (2)
Wine shows (1)	<input type="radio"/>	<input type="radio"/>
Wine and food festivals (2)	<input type="radio"/>	<input type="radio"/>
Wine club (3)	<input type="radio"/>	<input type="radio"/>
Retail trade (4)	<input type="radio"/>	<input type="radio"/>
Tourism New Zealand (5)	<input type="radio"/>	<input type="radio"/>
Local or regional tourism (6)	<input type="radio"/>	<input type="radio"/>
Visitor information sources (7)	<input type="radio"/>	<input type="radio"/>
Word of mouth (8)	<input type="radio"/>	<input type="radio"/>
New Zealand Winegrowers (9)	<input type="radio"/>	<input type="radio"/>
Mailing list (10)	<input type="radio"/>	<input type="radio"/>
Magazines (11)	<input type="radio"/>	<input type="radio"/>
Newspapers (12)	<input type="radio"/>	<input type="radio"/>
Radio (13)	<input type="radio"/>	<input type="radio"/>
Television (14)	<input type="radio"/>	<input type="radio"/>
Website (15)	<input type="radio"/>	<input type="radio"/>
Guidebooks (16)	<input type="radio"/>	<input type="radio"/>
Internet promotion (17)	<input type="radio"/>	<input type="radio"/>
Online Social Networking Media (18)	<input type="radio"/>	<input type="radio"/>
Brochures (19)	<input type="radio"/>	<input type="radio"/>
Other (20)	<input type="radio"/>	<input type="radio"/>

Q43aa If you selected other, please specify:

Q43b. How important are these media for attracting visitors to YOUR WINERY? (Please select ONE option)

	Extremely (1)	Very (2)	Somewhat (3)	Not very (4)	Not at all (5)	Don't know (6)
Wine shows (1)	<input type="radio"/>					
Wine and food festivals (2)	<input type="radio"/>					
Wine club (3)	<input type="radio"/>					
Retail trade (4)	<input type="radio"/>					
Tourism New Zealand (5)	<input type="radio"/>					
Local or regional organisation (6)	<input type="radio"/>					
Visitor information sources (7)	<input type="radio"/>					
Word of mouth (8)	<input type="radio"/>					
New Zealand Winegrowers (9)	<input type="radio"/>					
Mailing list (10)	<input type="radio"/>					
Magazines (11)	<input type="radio"/>					
Newspapers (12)	<input type="radio"/>					
Radio (13)	<input type="radio"/>					
Television (14)	<input type="radio"/>					
Website (15)	<input type="radio"/>					
Guidebooks (16)	<input type="radio"/>					
Internet promotion (17)	<input type="radio"/>					
Online Social Networking Media (18)	<input type="radio"/>					
Brochures (19)	<input type="radio"/>					
Other (20)	<input type="radio"/>					

TOURISM AND YOUR WINERY

Q44. What is your attitude towards tourism activity at YOUR WINERY? (Please select ONE option)

	Strongly agree (1)	Agree (2)	Unsure (3)	Disagree (4)	Strongly Disagree (5)
Cellar door visitors do not buy much wine (1)	<input type="radio"/>				
Tourists are valuable (2)	<input type="radio"/>				
Tourism attracts a wide range of customers to my winery (3)	<input type="radio"/>				
Tourism provides significant marketing opportunities (4)	<input type="radio"/>				
Tourism positively impacts the sales of my wine offshore (5)	<input type="radio"/>				
Tourism does not contribute greatly to my business success (6)	<input type="radio"/>				
The overall benefits of tourism outweigh the negative impacts (7)	<input type="radio"/>				
Tourism increases awareness of my winery through word of mouth (8)	<input type="radio"/>				
Tourism does not attract the kind of visitors I want to my winery (9)	<input type="radio"/>				

TOURISM AND YOUR REGION

Q45. What is your attitude towards tourism and tourism development in YOUR REGION? (Please select ONE option)

	Strongly Disagree (1)	Disagree (2)	Unsure (3)	Agree (4)	Strongly Agree (5)
The tourism industry is important to the wine industry as a whole (1)	<input type="radio"/>				
Promoting tourism in the region brings more visitors to my winery (2)	<input type="radio"/>				
I believe that tourism in this region should be actively encouraged in the wine industry (3)	<input type="radio"/>				
The wine industry has much to offer the tourism industry (4)	<input type="radio"/>				
The tourism industry has much to offer the wine industry (5)	<input type="radio"/>				

TOURISM AND YOUR WINE Q46. What is your attitude towards tourism and wine sales? (Please select ONE option)

	Strongly Agree (1)	Agree (2)	Unsure (3)	Disagree (4)	Strongly Disagree (5)
Tourism enhances product/brand awareness (1)	<input type="radio"/>				
Tourism helps to differentiate my wine from others (2)	<input type="radio"/>				
Tourism helps to develop postal mail order sales (3)	<input type="radio"/>				
Tourism helps to develop Internet based sales (4)	<input type="radio"/>				
Tourism helps to educate my customers (5)	<input type="radio"/>				

TOURISM PROMOTION

Q47a. The following is a list of tourist promotions in your region. Which of these have been successful in attracting visitors to YOUR WINERY? (Please select ONE option)

	Extremely (1)	Very (2)	Somewhat (3)	Not very (4)	Not at all (5)	Don't know (6)
Regional wineries' brochure (1)	<input type="radio"/>					
Holiday and travel shows (2)	<input type="radio"/>					
Wine and food festivals (3)	<input type="radio"/>					
Tourism awards (4)	<input type="radio"/>					
Media familiarisation (5)	<input type="radio"/>					
Public tastings (6)	<input type="radio"/>					
Wine exhibitions/shows (7)	<input type="radio"/>					
Regional tourist guides (8)	<input type="radio"/>					
Winery based events (9)	<input type="radio"/>					
Wine trail or road signage (10)	<input type="radio"/>					
Regional website (11)	<input type="radio"/>					
Other (please specify) (12)	<input type="radio"/>					

Q47aa If you selected other, please specify what promotions these are:

Q48a. Who do you feel should be primarily responsible for PROMOTING wine tourism? (Please rank in order of importance, 1 = MOST IMPORTANT)

- _____ Regional tourism organisations (1)
 _____ Wine industry associations (2)
 _____ Individual wineries (3)

Q48b If you believe that any other organisation(s) that should be primarily responsible for promoting wine tourism, please state this here:

Q.49. Alliances

What type of relationship, if any, DO YOU HAVE with the following organisations? (Please select corresponding option for each question or state other relationship)

Q49a. Alliances What type of relationship, if any, DO YOU HAVE with the following organisations? (Please select corresponding option for each question or state other relationship)	None (1)	Contact as required (2)	Member (3)	Co-operative marketing or promotion (4)
Tourism New Zealand (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regional Tourism Organisation (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New Zealand Winegrowers (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable Winegrowers New Zealand (SWNZ) (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NZGVIG (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regional Grape Growers Organisation (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NZ Society of Viticulture and Genology (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regional Wine Organisation (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitor Information Centres (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tourism Industry Association of NZ (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
100% Pure New Zealand (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Development Boards (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Council (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regional Council (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trade and Industry New Zealand (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chamber of Commerce (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ministry of Economic Development (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other Central Government Agencies (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hospitality associations (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local food and wine promotion group/network (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q49b If you are a member of any other industry organisation(s) that is not listed above, then please specify what these organisation(s) are:

Q50. What other promotional activities would you like to see conducted to promote tourism to the wineries in your region?

Q51. Do you have any comments on wine tourism that have not been covered by this survey, or that you feel are particularly important for your winery, your wine region, or wine tourism in New Zealand?

Q52 PERSONAL DETAILS Do you wish to receive a summary copy of the survey results?

- Yes (1)
- No (2)

Q53 If yes, how do you wish to receive them?

- Post (1)
- Email (2)

Q54 Further surveys Would you be willing to participate in further surveys?

- Yes (1)
- No (2)

Q55 Would you like to go into the draw to win a copy of the book 'Wine Marketing: a practical guide' by C. Michael Hall and Richard Mitchell?

- Yes (1)
- No (2)

Q56 Would you also like the previous survey summary results from 1997 and 2003 to be sent to you?

- Yes (1)
- No (2)

Q57 If yes, how do you wish to receive them?

- Post (1)
- Email (2)

Q58 Please enter your details below in the spaces provided:

Your name (1)

Your organisation (2)

Your title and position (3)

Your address (4)

Appendix F: Cover letter for the New Zealand version of the 2015/2016 survey

November 11th, 2015.

Dear **(insert name here)**,

The Department of Management at the University of Canterbury is conducting a survey on the adoption of sustainable winegrowing practices in New Zealand. This survey is part of a cross-national study between the New Zealand, Australian, South African and Canadian wine industries that is designed to compare wine producers' attitudes towards sustainability.

This present survey is being carried out as part of a PhD thesis by Tim Baird, under the supervision of Professor C. Michael Hall at the University of Canterbury. All results are treated anonymously and single wineries cannot be identified through the final results. Name and contact details are only required should you wish to be sent a summary of results of the survey.

This study is a follow up to the three previous New Zealand based national winery surveys conducted in 1997, 2003 and 2010 in order to benchmark changes which have taken place in the industry with respect to the adoption of sustainable winegrowing practices. We realise that the global wine industry is experiencing some significant financial challenges at present and that this particular survey is quite extensive, but it is only conducted once every five years. Past results of this survey series have communicated relevant information back to the wine industry and Government agencies, and your input will help to provide up to date information on the present levels of adoption regarding sustainable winegrowing practices.

To take part in the survey simply fill out the attached questionnaire and send it back to the University of Canterbury by Friday, December 11th in the freepost prepaid envelope provided.

As a means of thanking you for your participation, there is the option to receive summary results of this survey as well as the results obtained from the three prior New Zealand-based surveys conducted in 1997, 2003 and 2010.

If you have any further questions regarding this survey or wish to know any other aspect of the wine consumer and tourism research undertaken by the Department of Management at the University of Canterbury, please e-mail tim.baird@canterbury.ac.nz. An online version of this survey is also available if you would prefer this option, and can be located at:
http://canterbury.qualtrics.com/SE/?SID=SV_bEPmjZFJWNM4IEB

Thank you for your assistance with this survey.

Tim Baird & Michael Hall

Department of Management

University of Canterbury

Appendix G: Cover letter for the Tasmanian version of the 2015/2016 survey

June 7th, 2016.

Dear **(insert name here)**,

The School of Business at Curtin University in association with the Department of Management, Marketing and Entrepreneurship at the University of Canterbury, Christchurch, New Zealand are conducting a survey based on winery attitudes towards the adoption of sustainable winegrowing practices in Tasmania. We realise that the Tasmanian wine industry is experiencing some significant challenges at present, and that this particular survey is quite extensive. Past results of this survey series have communicated relevant information back to the wine industry and Government agencies, and your input will help to provide up to date information on the current attitudes towards sustainable winegrowing practices.

This present survey is being carried out as part of a PhD thesis by Tim Baird, under the supervision of Professor C. Michael Hall at the University of Canterbury, Christchurch, New Zealand in association with Associate Professor Haymantee Rumi Ramkissoon from the School of Business at Curtin University in Perth. All results are treated anonymously and single wineries cannot be identified through the final results. Name and contact details are only required should you wish to be sent a summary of results of the survey.

To take part in the survey simply fill out the attached questionnaire and send it back to the School of Business at Curtin University by Friday, July 8th in the freepost prepaid envelope provided.

As a means of thanking you for your participation, there is the option to receive summary results of this survey.

If you have any further questions regarding this survey or wish to know any other aspect of the wine consumer, sustainability and tourism research undertaken by the Department of Management, Marketing and Entrepreneurship at the University of Canterbury and the School of Business at Curtin University, please e-mail haywantee.ramkissoon@curtin.edu.au or by telephoning (08)92669574. Alternatively you can also email Tim Baird at tim.baird@canterbury.ac.nz. An online version of this survey is also available at http://canterbury.qualtrics.com/SE/?SID=SV_0AIAhop63Yve5LL

Thank you for your assistance with this survey.

Associate Professor Haymantee Rumi Ramkissoon

School of Business, Curtin University, Perth;

Tim Baird & Professor Michael Hall

Department of Management, Marketing and Entrepreneurship

University of Canterbury, Christchurch, New Zealand.

Appendix H: Cover letter for the Western Australian version of the 2015/2016 survey

June 7th, 2016.

Dear **(insert name here)**,

The School of Business at Curtin University in association with the Department of Management, Marketing and Entrepreneurship at the University of Canterbury, Christchurch, New Zealand are conducting a survey based on winery attitudes towards the adoption of sustainable winegrowing practices in Western Australia. We realise that the Western Australian wine industry is experiencing some significant challenges at present, and that this particular survey is quite extensive. Past results of this survey series have communicated relevant information back to the wine industry and Government agencies, and your input will help to provide up to date information on the current attitudes towards sustainable winegrowing practices.

This present survey is being carried out as part of a PhD thesis by Tim Baird, under the supervision of Professor C. Michael Hall at the University of Canterbury, Christchurch, New Zealand in association with Associate Professor Haymantee Rumi Ramkissoon from the School of Business at Curtin University in Perth. All results are treated anonymously and single wineries cannot be identified through the final results. Name and contact details are only required should you wish to be sent a summary of results of the survey.

To take part in the survey simply fill out the attached questionnaire and send it back to the School of Business at Curtin University by Friday, July 8th in the freepost prepaid envelope provided. As a means of thanking you for your participation, there is the option to receive summary results of this survey.

If you have any further questions regarding this survey or wish to know any other aspect of the wine consumer, sustainability and tourism research undertaken by the Department of Management, Marketing and Entrepreneurship at the University of Canterbury and the School of Business at Curtin University, please e-mail haywantee.ramkissoon@curtin.edu.au or by telephoning (08)92669574. Alternatively you can also email Tim Baird at tim.baird@canterbury.ac.nz. An online version of this survey is also available at http://canterbury.qualtrics.com/SE/?SID=SV_0AIAhop63Yve5LL

Thank you for your assistance with this survey.

Associate Professor Haymantee Rumi Ramkissoon

School of Business, Curtin University, Perth;

Tim Baird & Professor Michael Hall

University of Canterbury, Christchurch, New Zealand.

Appendix I: Ethics Approval



HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 364 2987, Extn 45588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2015/54/LR-PS

29 June 2016

Tim Baird
Department of Management, Marketing & Entrepreneurship
UNIVERSITY OF CANTERBURY

Dear Tim

Thank you for forwarding your low risk application to the Human Ethics Committee for the research proposal titled "The adoption of sustainable winegrowing practices: a cross-national comparison between New World wineries".

I am pleased to advise that this application has been reviewed and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 19th June 2016.

With best wishes for your project.

Yours sincerely

R. Robinson
pp.

Jane Maidment
Chair, Human Ethics Committee

Appendix J: Sustainable winegrowing in New Zealand

Tim Baird and C. Michael Hall

Introduction

Although wine, as well as wine regions and businesses, is often promoted in terms of its environmental attributes, the reality is that winegrowing is an industrial process. In many cases winegrowing requires substantial chemical inputs, such as biocides and fertilisers, and is also responsible for emissions, including the transport of wine from vineyard to the retailers – what is sometimes referred to as ‘wine miles’ (Hall and Mitchell 2008). As a result many wineries and wine regions are not only seeking to make their wine production more sustainable but are also looking to use sustainable practices as a point of differentiation in an otherwise congested and highly competitive market.

Following a review of some of the key issues associated with sustainable wine growing, this chapter provides an overview of sustainable wine growing in New Zealand at three different levels. First, the way in which New Zealand wine is positioned within the clean and green New Zealand brand and the reality of that positioning. Second, the adoption of the sustainable winegrowing strategy within the New Zealand wine industry. Third, the results of a survey of New Zealand wineries with respect to wine tourism and the nexus of sustainability, biosecurity, innovation, marketing, networks and cooperation. This chapter also notes the significance of sustainable wine growing as part of the positioning of New Zealand wine in the international marketplace but suggests that substantial issues loom with respect to the broader adoption of sustainable practices.

Key issues within sustainable winegrowing

The concept of sustainability in viticulture and oenology, what are jointly described here as winegrowing, has been defined as “growing and winemaking practices that are sensitive to the environment (environmentally sound), responsive to the needs and interests of society-at-large (socially equitable), and are economically feasible to implement and maintain” (California Sustainable Winegrowing Alliance, 2001, as cited in Zucca, Smith & Mitry, 2009, p. 190). Although Ohmart (2008a) writes of a synchronicity that can be achieved when the goals of sustainable winemaking practices are in tandem with both the local community and the natural environment, the development of sustainable winegrowing presents a number of challenges to existing practices within wine production and marketing (Hall and Mitchell 2008; Alonso and Liu 2012). Not only have there been changes made to production methods, but also the move towards sustainable practices within the wine industry has created several significant issues: first, the adoption, implementation and governance of these practices; second, how these sustainable practices are promoted in terms of brand positioning and competitive advantage; and, finally, whether sustainable winegrowing represents a pathway towards long term economic viability for wineries.

Although designed to promote a unified industry wide benchmark for vineyards, wineries and other wine businesses to strive to achieve in terms of sustainable practices, the adoption of initiatives such as industry wide sustainability schemes are important as they can be used not only in the promotion wine products, but also of tourism related ventures such as wine regions and wine trails (Kennedy 2009) that are of major marketing and retail importance for many wineries and wine brands. Yet the development of such ventures is not only dependent on the size and economics of individual wineries, but also the ability of wineries to deal with the inherent risks borne from engagement in tourism, including problems in terms of biosecurity (Hall 2003, 2005). As a number of vineyards and wine regions have experienced,

the introduction and spread of diseases and vectors harmful to viticulture such as phylloxera and Pierce's disease could potentially destroy a vineyard, financially if not biologically.

The recognition of importance of sustainability issues occurs on multiple levels both internal and external to the winery concerned (Marshall et al. 2005; Gabzdylova, et al., 2009; Alonso et al. 2012). First, stakeholders perceive sustainability as an important source of competitive advantage which can transfer into a positive, environmentally conscious image in the mind of the consumer (Kennedy, 2009) resulting in increased sales and brand loyalty (Sen et al. 2006). Second, wine producers face an extremely competitive business environment given a decline in per capita wine consumption, the increased internationalisation of wine sales, and shifts in consumer taste (Hall and Mitchell 2008). For example, in a domestic market of around four million people the Zealand wine industry has become increasingly crowded with 511 wineries registered in *The Australian and New Zealand Wine Directory* in 2009 (Winetitles 2009) as compared to 193 in 1995 (Hall 1996).

The adoption of sustainable practices as a point of differentiation amongst wineries appears a growing trend (Flint and Golicic 2009; Atkin et al. 2011; Carmichael and Senese 2012). The way in which the end product reaches consumers has become important when considering environmental issues such as carbon emissions and food miles undertaken in the journey from the vineyard to final consumption (Kennedy 2009). Attracting wine tourism via the promotion of sustainable methods of onsite viticultural production is another path which is being used pursue competitive advantage. However, this pursuit, although undertaken in the interests of protecting the immediate environment, does not always marry with the political and ecological realities of sustainability at a global scale (Hall 2010b). Therefore, to be truly sustainable wine growing needs to understand the environmental, social and economic effects of both its supply chain and its distribution channels as well as the perceptions of the value of sustainable approaches within the wine industry.

In their study of sustainable viticulture practices in California Zucca et al. (2009) contend that it appeared to be the larger wineries that had the resources and financial means to pursue their locally based sustainability program. Their study indicated that there appeared to be a slower rate of adoption by smaller vineyards that were less financially empowered (Zucca et al. 2009). Carmichael et al. (2012) point out in their study of two contrasting Canadian wine regions (the Niagara Peninsula of Ontario and the Okanagan Valley of British Columbia) that adoption of sustainable practices is also dictated by the stage of business development of each individual winery. This scenario suggests what Wall (1997) described as a delicate balancing act; a balance that creates synergy between the supply and demand forces at work in order to maintain both a competitive and viable market position whilst addressing both political and ecological concerns (Zucca et al. 2009; Hall 2010b; Carmichael et al. 2012). Indeed, Sinha and Akoorie (2010) argue that New Zealand wineries that are committed to an export orientation are more likely to adopt environmental practices, and it is not institutional pressure that forces these organisations to do so.

The Positioning of New Zealand Wine Within the National Brand

The somewhat idealistic personification of the New Zealand national brand with emphasis placed on the three traits of clean, green and pure (Hall 2010a; Marshall et al. 2010) is one which has been criticised as being at odds with the overseas perception of New Zealand, including wine exports (Beverland and Lindgreen 2002; Clayton and Stevens 2007; Cumming 2010). Criticism has been levelled particularly in terms of the food miles involved in such exports (Gabzdylova et al. 2009; Kennedy 2009; Kemp et al. 2010). As an early adopter of

the Brand New Zealand strategy (Spratt 2010), New Zealand wine has been marketed internationally as being born of an industry that is both sustainable and innovative (Kennedy 2009). On the surface the image portrayed is one where industry wide sustainability initiatives are readily accepted and incorporated into wine production, with NZ Winegrowers (2011: 21) claiming in their 2011 annual report that ‘over 95% of our vineyard area and wine production is now participating in this Sustainable Winegrowing programme’. NZ Winegrowers (2011: 21) also state:

Over the last year we have conducted research in our main markets, and have had conversations throughout the value chain. We have asked them what their concerns are with respect to sustainability, how we rate, and how they would like to learn more about what we do. They tell us we need to provide a layered message; building simple awareness with consumers, providing assurance to our customers that we won’t let their brand down, and that it must be backed up with evidence.

These claims raise important issues as to where the current position of New Zealand wine in the context of sustainability really lies; if such assertions were taken at face value, then it would appear to suggest that the introduction of sustainable practices within the New Zealand wine industry has been without problems. However, a second glance at this image appears to reveal significant problems in measuring up to the reality that this brand position dictates.

Sustainable Winegrowing Initiatives in New Zealand

The evolution of industry focused initiatives to promote sustainable winegrowing within the New Zealand wine industry on a systemic basis began in 1995 with the development of the Sustainable Winegrowing New Zealand (SWNZ) organisation (SWNZ 2010). The SWNZ scheme was first introduced commercially in 1997 with the expectation that it would be adopted by winegrowers from all grape growing regions (SWNZ 2010), and coupled with the introduction of winery standards in 2002 (NZ Wine 2010) aimed to underline an industry-wide commitment to sustainable production practices and techniques. The goal of this initiative was to have full participation in the scheme by all New Zealand winegrowers by 2012, and steps to ensure this have been taken by making SWNZ membership mandatory for all wineries if they wish to take part in trade shows and export their products under the Wine New Zealand banner (SWNZ 2010). Enforcement is also undertaken through external auditing of sustainable practices by SWNZ appointed agents (NZ Wine 2010).

The adoption of sustainable winegrowing strategies within the New Zealand wine industry

SWNZ seeks to provide a best practice model which wineries can utilise to benchmark their environmental practices (SWNZ, 2010). This should provide a greater degree of quality during all stages of production and by recognising that sustainability is also an important issue to the end consumer it should positively influence decisions to buy wine produced in New Zealand (SWNZ, 2010). The SWNZ manifesto encompasses five core strategies which are designed to provide benefits to all member of the scheme:

- 1) Provide a framework for viticultural and winemaking practices that protect the environment while efficiently and economically producing premium wine grapes and wine.
- 2) Implement a programme of continual improvement to ensure companies operate with a goal of improving their operational practices.

- 3) Provide a platform for technology transfer so that companies are kept up to date regarding any new technology and its application.
- 4) Create an external audit structure that has integrity and rigour to comply with market expectations.
- 5) Give winegrowers the opportunity to be a part of a positive future and met the New Zealand wine industry goal of 100% of grape growers and winemakers operating under approved independently audited sustainability programs.

(NZ Wine 2010).

As membership of the SWNZ scheme is mandatory for all New Zealand wineries (SWNZ 2010), then applying such a framework to the New Zealand wine industry creates the potential for division should wineries choose to reject the aims of the scheme altogether. Although as of 2011 the number of vineyards exceeds the number of grape growers stated by SWNZ in their annual report (SWNZ, 2011) by the year ending June 2009 only 135 wineries, representing 21 per cent of New Zealand wineries (Table 1), had actually become members of the sustainable wine growing scheme. Commitment to carbon-neutral wine exports remained the focus of only a few, high profile wineries (NZ Wine 2010) so based on this evidence alone it would appear that there are some significant issues at play in the adoption of a sustainable winegrowing approach. Furthermore, SWNZ is only limited to physical wine production elements; other issues such as the brand positioning of wine products, the implications of wine tourism and biosecurity, and wine miles are not included.

Table 1: Membership of SWNZ

	2004	2005	2006	2007	2008	2009
vineyards	403	431	432	457	683	1244
No of	463	516	530	543	585	643
wineries						
wineries	30	51	53	59	77	135
%	6.5%	9.9%	10%	10.9%	13.2%	21%
membership						

Source: New Zealand Winegrowers 2009

The relationship between biosecurity and sustainability within the New Zealand wine industry

The need to incorporate biosecurity elements into the framework of sustainability programmes in New Zealand has been suggested by Renton, Manktelow and Kingston (2009) who argue that accessible biosecurity information needs to be provided to winegrowers in order to protect vineyards from disease and pests. Exploration of the relationship between biosecurity and sustainable wine tourism in New Zealand was first undertaken by Hall (2003). Key themes that have emerged within the area of wine tourism in relation to biosecurity and invasive species concern the level of awareness of potential biosecurity risks, what strategies are in place to deal with any such occurrences, and where wineries are able to turn in order to gain the information required to deal with and contain any problems that could potentially arise as a result of a breach of biosecurity protocols. It has been noted that there is a limited awareness of biosecurity risks at the level of the wine tourist who is coming into the country from a foreign destination (Hall, 2003), while an awareness of the same risks have been recognised as being important by those at who are at the stakeholder level within the wine industry (Wilkins and Hall, 2001; Hall, 2005). However, this has tended to be at a perceived as a national level issue rather than one to be dealt with at the vineyard scale.

Christensen, Hall and Mitchell (2004) found that only 6 per cent of respondents to the New Zealand National Wineries' Survey conducted in 2003 had an active biosecurity strategy in place, which in itself provides a cause for alarm. International recognition of the importance of strict biosecurity protocols and the importance of a high degree of information sharing regarding potential biosecurity risks within wine production has been noted by Poitras and Getz (2006) in their study of wine tourism in Oliver, British Columbia. Protection of the natural environment from biosecurity risks that could be introduced by visitor traffic onsite was seen by stakeholders as paramount to any long term strategies towards promoting sustainability initiatives (Poitras and Getz 2006).

Innovation in the context of the New Zealand wine industry sustainability initiatives

A further important element of sustainability is the capacity for businesses and organisations to innovate with respect to the mitigation of and adaptation to environmental change (Gössling et al., 2009). Innovation is defined as being 'the development or introduction of any new or significantly improved activity' (OECD & Statistical Office of European Communities 2005) undertaken by participants, and encompasses any products, processes and methods that may have been first developed by a particular organisation that have since been adopted by others (OECD et al. 2005). Innovation is increasingly seen as an important element of sustainability, including with respect to the adaptation and mitigation of climate change. The OECD et al. (2005) definition of innovation suggests a potential dilemma for the New Zealand wine industry. On one hand, you have the approach taken within the SWNZ scheme whereby the sustainable processes methods and products produced must meet a pre-determined criteria dictated by this organisation (SWNZ 2010), while on the other hand there are many wineries which pre-date the introduction of SWNZ in 1995 (SWNZ 2010), and arguably have already created their own innovations within the context of this definition without external intervention. Pickersgill and Edwards (2005: 8) remark that 'innovation is a complex, multiple dimensional process that involves scientific and technical expertise, technical and educational infrastructure, integrated product and supplier networks and effective management and marketing strategies and government support'. Treatment of this complexity needs to be addressed at all levels of governance (Curtain 2004) within the myriad of sectors that constitute the New Zealand wine industry in order to ensure the successful implementation of innovative processes and techniques.

Extant literature in the field of innovation has pointed towards four main categories that exist consisting of product and process innovations with the addition of organisational and marketing innovations (OECD et al. 2005). Product innovations include significantly improved goods and services, and have been noted as also encompassing the activities that tourists may experience and participate in when visiting destinations (Sørensen 2001; Stamboulis and Skayannis 2003; Hall 2009). In the context of sustainable winemaking, this notion applies to two dimensions; first, wine tourists who are attracted to wineries because of the process and production methods used on site fit within their political ideology; second, the end consumer who purchases a particular brand of wine because it is manufactured using sustainable methods.

Process innovations are the new or improved methods of production or delivery within an organisation that aim to improve efficiency and flow (OECD et al. 2005; Hjalager 2009). These are associated primarily with the implementations of new technology designed to achieve specific managerial objectives (Yuan et al., 2006; Ohmart 2008b; Bessant et al. 2009; Giuliani et al. 2011). Organisational innovations are deemed as those which improve existing

business practices, workplace organisation or relations external to the firm (OECD et al. 2005). Innovations at the organisational level can signal significant changes to existing strategies, structures and routines (Statistics New Zealand 2007), and as such serve to grow the existing knowledge base within an organisation (Hall & Williams 2008; Hall 2009). Finally, marketing innovations are any new or significantly improved marketing methods that may have been adopted by the organisation (OECD et al. 2005) in order to either increase market share or facilitate entry into new markets.

Method

The 2010 New Zealand National Wineries' Survey was designed to facilitate the collection of information about wine tourism in New Zealand from the wineries' perspective. The sample population was derived from all New Zealand wineries registered in *The 2009 Australian and New Zealand Wine Industry Directory* (Winetitles 2009) and it was the third such survey of its type to be undertaken as part of a longitudinal study.

Survey Design

Based on the template provided by the two previous New Zealand National Wineries' Surveys (Hall and Johnson 1998; Christensen et al. 2004) survey questions were created by the researchers involved, those posed by previous New Zealand studies (Reid 1990), and international studies (Golledge & Maddern 1994; Dodd and Bigotte 1995; Maddern and Golledge 1996; Macionis 1997). A question regarding biosecurity was added to the second New Zealand National Wineries' Survey (Christensen et al., 2004), and this was expanded out into a series of questions that make up a section dedicated solely to biosecurity issues in the 2010 New Zealand National Wineries' Survey. The determination of the current New Zealand wine industry stance towards sustainable practices as a form of innovation was introduced as a new section in the 2010 New Zealand National Wineries' Survey which utilised the OECD (2005) framework as a basis for the questions. In addition, questions based on those in the *Innovation in New Zealand* survey (Statistics New Zealand 2007) were used in order to provide a benchmark the wine industry with other agricultural-based industries and the tourism sector.

The 2010 New Zealand National Wineries' Survey was divided into seven main sections. The first two sections focused on the winery and visitor profiles. This was then followed by sections dedicated to biosecurity and sustainability, before innovation in the New Zealand wine tourism industry was examined. The final section which focused on tourism and marketing then led into a set of questions that were designed to gather respondent contact information. Questions in the 2010 survey were similar to those asked in the 1997 and 2003 surveys with some modifications designed to gather updated information regarding biosecurity issues. Further adaptations were made based on the results of previous New Zealand wine tourism research (Hall and Johnson 1998; Hall et al. 2000; Mitchell and Hall 2001a, 2001b; Christensen et al. 2004).

Source data

The 2010 survey utilised primary data obtained from participants who represent each of the 511 vineyards located within New Zealand as per publically available winery listings published in *The 2009 Australian and New Zealand Wine Industry Directory* (Winetitles 2009) who initially received the survey via email (491 wineries) or by post (20 wineries). It was originally envisaged that conducting the survey by email for a majority of the

participants would yield a greater response rate than previous New Zealand National Wineries' Surveys had been able to obtain. This particular approach to data collection yielded an unsatisfactory response rate initially (with only 43 responses) as respondents appeared unwilling to provide industry sensitive information via an online survey. To counter this, a further postal mail out to all wineries who had not yet responded to the online survey was conducted, and this yielded a far more successful response rate; a further 82 wineries responded, which raised the response rate to 125 wineries (25 per cent) in total. Of these 125 wineries, 22 responded that they had in fact recently gone out of business since the publication of *The 2009 Australian and New Zealand Wine Industry Directory* (Winetitles 2009) but as these were still judged as valid responses, these surveys were still included in the overall response rate. The remaining 103 wineries who responded then provided the data that this study was based upon. Prior response rates to the 1997 survey obtained 111 responses out of 270 producers, giving a response rate of 41.1 per cent (Hall et al., 1998), whilst the second survey conducted in 2003 achieved a response rate of 121 usable responses out of the 419 wineries surveyed, resulting in a response rate of 28.9 per cent which compares favourably to other business surveys conducted within the New Zealand wine industry such as Deliotte's (2010) survey which had a response rate of just 6 per cent from New Zealand wineries.

In the 2010 New Zealand Wineries survey, participants were asked a series of questions related to sustainability practices. The first set of questions employed a five point Likert scale (1= Strongly disagree, 5= Strongly agree) and asked how important participants believed sustainability practices were for the New Zealand wine industry, and whether any sustainability practices utilised onsite provided their winery with an important source of competitive advantage. Participants were then asked what the reasons were for the sustainability practices that they had chosen to employ. Nine options were presented; to increase revenue, to reduce costs, to increase market share, to reduce energy consumption or to reduce environmental impact. Also included in the options listed were to establish and/or exploit market opportunities, to improve productivity or to attract visitors to their particular winery. A final option was provided where participants could list any other reasons which fell outside these options. Further questions were added to determine what type of relationship winegrowers had with SWNZ, and also asked whether participants thought that biosecurity should be part of the overall SWNZ scheme.

A set of environmentally based questions regarding innovation in terms of changes to operational methods that resulted through the undertaking of sustainable practices were adapted from the *Innovation in New Zealand* study (Statistics New Zealand 2007) which contained questions based on innovation measures set by OECD et al. (2005). Participants were asked what the reasons were for the sustainability practices that they had chosen to employ. Nine options were presented in the same fashion as they had in the previous section regarding sustainability. Applying these innovation measures as set out by the OECD (2005) framework to the New Zealand wine industry provided an opportunity to benchmark attitudes towards innovation and provided the basis for comparison with past innovation studies conducted within the New Zealand agricultural sector towards sustainable practices.

Sustainability

Over half of the respondents either agreed or strongly agreed that sustainability practices are important for the New Zealand wine industry. 19.4 per cent of respondents were unsure about the importance of such practices, while over a quarter of respondents either disagreed or strongly disagreed that sustainability practices were important (Table 2). In contrast to the

position of Wine New Zealand over half of respondents did not believe that sustainability practices provided wineries with a source of competitive advantage

Table 2: Belief in importance of sustainability practices

Statement	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
Sustainability practices are important for the New Zealand wine industry	7.5%	18.4%	19.4%	33%	21.4%
Sustainability provides an important source of competitive advantage	16.5%	38.8%	16.5%	17.5%	10.7%

Over half (56.3 per cent) of respondents reported that their winery was an accredited member of Sustainable Wineries New Zealand, while the remainder did not have accredited membership to be part of the SWNZ scheme. In terms of the SWNZ scheme, 75 respondents (62.1 per cent) were already members. Eighteen respondents (15.5 per cent) had contact as required with SWNZ, while a further eighteen (15.5 per cent) had no relationship at all with SWNZ. Seven respondents (5.8 per cent) used co-operative marketing or promotion instead of the SWNZ scheme.

An overwhelming majority of 88.3 per cent of respondents stated that they did not choose to employ sustainability practices to increase revenue, while 70.9 per cent responded that they did not choose to employ sustainability practices to reduce costs. Instead the focus was on the reduction of environmental impact (60.2 per cent) and, to a lesser extent, the reduction of energy consumption (32%) (Table 3). Other reasons that were given by respondents for the adoption of sustainable practices included soil health, ‘company conscience’, the fact that SWNZ membership was compulsory, and also that it was mandatory to be a member of SWNZ if wineries wanted to enter wine shows. Respondents also stated that they felt that SWNZ membership had no real benefit to them, and one respondent even went as far as to refer to sustainability as ‘paper pushing B.S.’.

Table 3 Reasons for winery choosing to employ sustainability practices

Reason	Yes	No
To increase revenue	11.7%	88.3%
To reduce costs	29.1%	70.9%
To increase market share	16.5%	83.5%
To reduce energy consumption	32%	68%
To reduce environmental impact	60.2%	39.8%
To establish/ or exploit new market opportunities	19.4%	80.6%
To improve productivity	21.4%	78.6%
To attract visitors to my winery	12.6%	87.4%
Other	29.1%	70.9%

Discussion

Sustainable practices in the New Zealand wine industry

Based on the findings from the 2010 New Zealand National Wineries’ Survey, it appears that there is some disagreement within the New Zealand wine industry as to whether there is any real value to be gained from the adoption of the SWNZ scheme, and this is underlined by an

indifferent attitude shown towards sustainable methods of production. There is a distinct division in terms of agreement over the importance of sustainability practices, which runs counter to one of the main aims of SWNZ which is to implement a model of best practice for all wineries to use as a benchmark (SWNZ, 2010). If there is little or no perceived advantage to be gained when viewed from the supply-side perspective in terms of competitive advantage (38.8 per cent disagreed that sustainable methods provided this in this survey), then in order to achieve a high rate of adoption of the scheme SWNZ must address this gap.

Institutional pressures are not the sole significant force at play here. Sinha et al. (2010) suggest that other factors such as the export orientation of wineries are also important, as the end consumer places value on how many food miles a product that is supposedly sustainable has clocked up in reality, while Zucca et al. (2009) cite winery size, financial means and resource availability as critical factors in the adoption of sustainable practices. This would suggest that adoption of sustainable practices by New Zealand wineries is inhibited by SWNZ's approach where wineries are treated in a somewhat homogenous manner regardless of size, financial means and stage of business development (see also Carmichael et al. 2012); by disregarding the individualistic nature of those wineries whom SWNZ are aiming to attract it would seem that full industry adoption of the SWNZ scheme in 2012 could be asking for the impossible.

Leading reasons for the employment of sustainable methods were found to be the reduction of environmental impacts, the reduction of costs and the improvement of productivity. Attracting wine tourists, and in turn also seeking to increase revenue through openly advocating sustainability, were not viewed by wineries as motivating factors to adopt these methods, which disputes the notion that innovative practices are an important dimension to the tourist destination experience (Sørensen 2001; Stamboulis et al. 2003).

Only 56.3 per cent of wineries surveyed in the 2010 New Zealand National Wineries Survey stated that they were accredited members of the SWNZ; this figure itself speaks volumes about the seeming disparity between the vision of SWNZ where all wineries are participants of this scheme by 2012, and the reality that some wineries simply appear to either not see any true value being gained through accreditation, or mistrust the ability of SWNZ to be able to follow through on delivering the strategic intent on which this scheme is based. This disparity is further enhanced by the fact that 15.5 per cent of wineries state that their only relationship with SWNZ is when it is required, which as a figure does not bode well in the context of attracting more wineries to adopt the aims of the scheme; this lack of confidence is also reflected by only 5.8 per cent of respondents considering it as beneficial to have SWNZ involved in terms of cooperative marketing or promotion, which is embarrassing to say the least when the promotion of sustainable methods of production is noted as being attractive to the success of wineries with a strong export orientation (Sen et al. 2004; Sinha et al. 2010). With several respondents highlighting the fact that membership of the SWNZ scheme is now mandatory if wineries wish to participate in events such as trade shows or engage in exporting their products it appears that there exists resistance towards the motives of SWNZ within some sectors of the New Zealand wine industry.

Biosecurity and sustainable winemaking in New Zealand

Significant issues with respect to sustainability are also seen in terms of biosecurity in New Zealand wineries. Almost a third of respondents (31.1 per cent) allowed visitors to wander at their own leisure through the vines at their winery. When asked whether their vineyard had biosecurity measures in place for wine tourists, 22.3 per cent of respondents believed that the current measures that they employed were adequate. Measures cited by respondents were the

exclusion of cars, control of visitor access, and warning notices. Some areas that were vulnerable to phylloxera were fenced off while other wineries refuse to allow visitors who have visited other vineyards onto their vineyard. Footwear checks, education, good management and visual or verbal warnings were also utilised.

When asked whether the current level of information received from Government agencies was adequate, over half of the respondents (51.5 per cent) replied that they felt unsure that the current level of information available was adequate. 25.2 per cent were believed that the information currently received regarding biosecurity threats was inadequate, while only 9.7 per cent of respondents agreed that Government agencies were providing an adequate level of information to their winery. Almost half of the respondents surveyed (48.5 per cent) were unsure as to whether they had effective strategies in place at their vineyards to deal with biosecurity threats and only 24.3 per cent felt that the current strategies that they were employing would be effective. Nevertheless, the majority of respondents (58.3 per cent) felt that there was no need to include a biosecurity component as part of the SWNZ scheme.

The remnant of good news here with respect to sustainability is that the 23 per cent of wineries who have measures in place has grown substantially from the only six per cent found in the previous 2003 New Zealand National Wineries Survey (Christensen et al. 2004). These figures highlight that there is a gap in the knowledge of wineries towards the potential dangers due to a lack of adequate information sharing by those responsible for the governance of biosecurity protocols (Hall 2003; Renton et al. 2009). Information accessibility (Renton et al. 2009) needs to be improved and biosecurity protocols standardised, otherwise the New Zealand wine industry is running the risk of being seriously affected by potential disease outbreaks. With almost a third of wineries reporting that visitors were able to wander freely amongst the vines when they visited a New Zealand winery it appears that the attitude of wineries towards risk mitigation requires a more cautious approach. As Poitras et al. (2006) point out, a lack of protection of the natural environment can effectively shatter any long term strategies that wineries have in place with regard to sustainability initiatives, no matter how honourable the motivations behind such strategies may be.

The area of greatest concern appears to be the high level of uncertainty (48.5 per cent) amongst respondents as to whether or not they believed that they currently had an effective strategy in place to deal with potential biosecurity threats. 19.4 per cent of respondents deem current strategies in this area as ineffective and 31.1 per cent of respondents stated that they received no information at all from any organisation charged with the governance of sustainable practices. Clearly this shows that there is a significant gap in information sharing presently that needs to be addressed. Nevertheless, such a situation is only likely to continue given that 58.3 per cent of the wineries surveyed believed that there was no need for a biosecurity component within the SWNZ scheme. Clearly, enticing adoption of the SWNZ scheme by New Zealand wineries could in fact present a prime opportunity to improve the poor levels of information sharing with regard to biosecurity threats (Hall 2003). By promoting SWNZ as a quality source of information regarding biosecurity protocols this could give the scheme added value, and in turn attract a greater rate of adoption of the scheme.

Sustainable innovation

Resistance towards innovation through the improvement of operational processes was also found within the New Zealand wine industry, with only 22.3 per cent of respondents actively stating that they had introduced new or significantly improved operational processes, which

would also include sustainable production methods. Of those who had changed their methods of production, 17.5 per cent of businesses had developed their own innovative methods, while 5.8 per cent had done so in partnership with other businesses. This negative attitude towards innovative practices within sectors of the New Zealand wine industry could also be found entrenched in figures given for the percentage of sales that came as a result of new or significantly improved goods or service with 37.9 per cent of respondents stating that innovative practices, if adopted, had actually had no effect on sales whatsoever. Only 13.6 per cent of wineries surveyed believed that innovations introduced had actually been responsible for ten per cent or less of their overall sales.

The underlying theme regarding innovation which this survey revealed was one where unless there was a proven track record for an innovative processes which could enhance the managerial and organisational objectives of the wineries involved (OECD et al. 2005; Yuan et al. 2006), or provide more efficient organisational and marketing objectives through product innovations (OECD et al., 2005; Hjalager, 2009), then New Zealand wineries tended to avoid innovation to a degree. This could serve to explain why there appears to be such a cautious approach within the industry towards the adoption of sustainable methods of wine production. This could be combated through SWNZ introduced agent assistance (Bessant et al. 2009) programmes relating to sustainable methods. Such an initiative could address this gap in innovation capability within the New Zealand wine industry where ‘firms may have a general awareness of the potential of the innovation on offer but do not see its relevance or applicability to them’ (Bessant et al. 2009: 7).

Conclusion

From the evidence presented within this chapter it is apparent that there are some significant issues at play within the New Zealand wine industry in terms of the adoption of sustainable winegrowing methods. There appears to be a very real risk that even with the full implementation of the SWNZ scheme in 2012 there will be a considerable backlash from some wineries towards the scheme. This could serve to create a division within the industry itself as the policies advocated by SWNZ are implemented by some but rejected in others. This also runs counter to one of the strategic aims of SWNZ – to have all New Zealand wineries participating in this scheme. It appears from the findings presented here that the implementation of SWNZ has actually alienated sections of the New Zealand wine industry, and this appears to draw a question mark over whether this scheme is in keeping with the current political, financial and ecological context that the New Zealand wine industry currently inhabits.

The New Zealand wine industry is not immune from problems experienced by other international wine regions, and the relative isolation of New Zealand alone is not enough to offer barriers against disease. This is especially important given that the success and future growth of the New Zealand wine industry in terms of exports and attracting visitor traffic appears strongly dependent on the position of New Zealand wine as being a sustainable product. Such brand positioning relies not only on the overall national branding strategy (Hall 2010a) organisations who govern the New Zealand wine industry. The need for a unified protectionist approach in terms of sustainable winegrowing has also been noted by Alonso et al. (2012) during a longitudinal study into similar sustainable winegrowing arrangements in the Spanish Canary Islands. In a statement that could be equally applicable to the situation that New Zealand winegrowers currently face, Alonso et al. (2012:13) warn that “in times of fierce competition from different tourist destinations, different countries/regions producing quality (and affordable) wines... the importance for tourist and wine regions [is] to

make concerted efforts and work towards sustainability (economic, environmental, and social)”. This statement suggests that initiative and innovation not only need to intersect in a unified fashion in order to produce success, but must do so in a way that is also realistic for the very constituents (in the case of this chapter the New Zealand wine industry) to whom sustainable winegrowing programmes are aimed towards.

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Appendix K: Competence-based Innovation in New Zealand Wine Tourism: Partial Strategies for Partial industrialisation

C. Michael Hall and Tim Baird

Introduction

Innovation is increasingly seen as an important element of wine tourism, particularly as environmental concerns regarding sustainability and climate change become major issues for wineries (Hall & Mitchell, 2008; Ohmart, 2008; Doloreaux, Chamberlain & Ben- Amor, 2013; Doloreaux & Lorde-Tarte, 2013; Ferreira & Muller, 2013; Lenzi, 2013; Brannon & Wiklund, 2014). Wine tourism is defined as “visitation to vineyards, wineries, wine festivals and wine shows for which grape wine tasting and/or experiencing the attributes of a grape wine region are the prime motivating factors for visitors” (Hall, 1996, p.1). Mitchell and Hall (2006) underline the fact that wine tourism is an important catalyst for providing potential opportunities for wine producers to add value to their existing market offerings. However, in the New Zealand context, wine producers are also operating in a volatile marketplace prone to not only economic fluctuation (Deliottes, 2010) but also to issues of oversupply (Euromonitor International, 2012). As a direct result of this a degree of caution with respect to the adoption of new business and environmental practices currently exists within the New Zealand wine industry (Deliottes, 2010; Baird and Hall, 2013). This cautious approach indicates that local firms who wish to utilise the competency-based approach to innovation (Goh, 2000) through the introduction of innovative production methods in response to environmental challenges appear reluctant to engage in knowledge transfer (Mowery & Oxley, 1996; Argote & Ingram, 2000; Goh, 2000), thereby stunting the potential for collaboration within the very networks which the New Zealand wine industry requires for survival in times of economic uncertainty.

Despite its importance it is only within the past decade that innovation has become a significant topic of study in tourism (Hall & Williams, 2008; Hjalager, 2009; Brannon & Wiklund, 2014) and wine industries (Bell & Giuliani, 2007; Giuliani et al., 2011; Doloreaux et al., 2013; Doloreaux & Lorde-Tarte, 2013;), and there is little specific research of wine tourism in relation to innovation. This chapter presents the results of a study of innovation in New Zealand wine tourism businesses based on whether the businesses surveyed chose to offer cellar door sales to wine tourists or did not engage in this form of wine tourism. Following a review of some of the key issues associated with innovation within the context of wine tourism, this chapter then explores innovation within the New Zealand wine industry in order to provide some background and local context. The third and final part of this chapter reviews the results of a survey of New Zealand wineries with respect to their engagement with wine tourism and innovation. It is concluded that substantial issues loom with respect to the broader adoption of innovative practices within the New Zealand wine industry and the level of institutional support currently available to New Zealand wineries.

Innovation within the New Zealand wine industry

The New Zealand wine industry has witnessed a growth in wine production that has also seen an explosion in the number of registered vineyards in New Zealand; 549 wineries were listed in the 2013 *Australian and New Zealand Wine Directory* (Winetitles, 2013) compared with 511 listed in 2010 (Winetitles, 2009; Baird & Hall, 2011), 270 listed wineries in 1997 (Hall & Johnson, 1998) and 419 in 2003 (Christensen et al., 2004). This same period has also seen a rise in the amount of interest in locally produced wine products available on the New Zealand

market (New Zealand Wine, 2009). This may appear to be good news, but with growth comes challenges. For example, Deliottes (2010, p. 21) suggest:

It would seem that the dialogue with customers is being conducted by the exporters and distributors on behalf of the wineries, thus creating a clear distinction between the *winemakers* and the *wine sellers*. The winemaker's dialogue with the end consumer remains a significant challenge.

Wine tourism has been long recognised as an opportunity for such dialogue (Hall, 1996). It is estimated that over the five years since 2010 that over 1 million international tourists have visited New Zealand wineries (Tourism New Zealand, 2014). The bulk of winery visitation is made up by domestic wine tourists, who account for 63 per cent of this figure (Ministry of Economic Development, 2009), and international guests make up the remaining 37 per cent (Ministry of Economic Development, 2009). However, despite tourism being recognised as a potential source of innovation given its role as a product test-bed and source of customer feedback there has been little direct study of the contribution of wine tourism to the innovative practices of winegrowers.

Innovation, wine and tourism

Four main categories of innovation are identified consisting of product and process innovations and organisational and marketing innovations (OECD et al., 2005). In the context of sustainable winemaking this also potentially applies to wine tourists who are attracted to wineries because of the process and production methods used on site, and the end consumer who purchases a particular brand of wine because it is manufactured using sustainable methods (Hall & Mitchell, 2008; Baird & Hall, 2013).

Studies of the relationship between wine tourism and innovation draw on a number of strands of literature. Early studies on innovation include the work of Hoerner (1995) which examined the competitive advantage which could be gained through adopting innovative practices utilising market research within the wine industry. Examining how innovation serves to improve wine production techniques (Aylward, 2002; Gilinsky et al., 2008) has also led into research into the effect of innovation on wine exports (Aylward, 2004a, 2004b; Olavarria et al., 2009) and the levels of knowledge sharing which exist between wine producers (Chiffolleau, 2005; Aylward, 2005a; Bou et al., 2008; Pickersgill & Edwards, 2009) including in the development of wine trails (Preston-Whyte, 2000). Studies have also been conducted which attempt to provide a benchmark for successful wine tourism regions (Getz & Brown, 2006) and review how successful tourism developments have benefited from the implementation of organisational, production or process changes (Hjalager, 2009).

Possibly the most prominent stream of innovation related writing is with respect to collaboration and co-operation in wine clusters and networks (Kuah, 2002; Aylward & Turpin, 2003; Chiffolleau, 2005; Aylward, 2002; Aylward, 2005a, 2005b; Aylward, 2006a, 2006b; Chiffolleau et al., 2006; Bou et al., 2008; Cusmano et al., 2008; Fleet, 2008; Taplin & Breckenridge, 2008; Touzard, 2010; Hira & Bwenge, 2011). The level of institutional support which is provided by regional and national governing bodies has been recognised as serving to increase levels of collaboration (Simpson et al., 2005; Aylward, 2006a; Guthey, 2008; Powrie & O'Connor, 2010; Hira & Bwenge, 2011), although regulatory demands can also impede relationship building (Ewert & Henderson, 2004).

The geographical proximity of members of wine clusters is another important factor for successful knowledge sharing between networks (Aylward, 2006b; Aylward & Zanko, 2006;

Gilinsky et al., 2008; Giuliani et al., 2011), including specifically in relation to wine tourism (Hall et al., 1997; Hall, 2003, 2004). However, not all wineries are working cooperatively. Marks and Mortensen (2003) observed that the failure of product innovations resulted in a loss of confidence amongst producers, which then went on to affect the rates at which future innovations were adopted by other wineries within the network (Kaine et al., 2007); this observation supports the argument that innovation-related performance within a firm is dependent on the extent of competency utilisation which occurs and how this is viewed by other members of the network (Filion, 1998; Bogner, Thomas and McGee, 1999; Goh, 2000). Pike and Melewar (2006) note that the protection of business reputation and brand identity was paramount amongst network members as no one wanted to be associated with an innovation which had failed to succeed.

In the New Zealand context, the very nature of the OECD et al. (2005) definition of innovation suggests a potential dilemma for New Zealand wine tourism. On one hand, for example, you have the approach taken within the Sustainable Wineries New Zealand (SWNZ) scheme whereby the sustainable processes methods and products produced must meet a pre-determined criteria (SWNZ, 2010), while on the other there are many wineries which pre-date the introduction of SWNZ in 1995 (SWNZ, 2010), and arguably have already created their own innovations without external intervention (Baird and Hall, 2013). Furthermore, tourism and innovation policies in New Zealand appear to have little formal inter-relationship; Hall (2009, p. 15) suggests that “it is possible that one of the reasons for the lack of recognition of tourism in innovation policy is that it is perceived as an industry that is not particularly innovative”.

Method

No prior studies specifically examine the New Zealand wine industry or wine tourism innovation; however, applying innovation measures as set out by the OECD et al. (2005) to the New Zealand wine industry does provide an opportunity to benchmark attitudes towards innovation within the context of past innovation studies conducted within the New Zealand agricultural sector. The 2010 New Zealand National Wineries’ Survey was designed to facilitate the collection of information about wine tourism in New Zealand from the wineries’ perspective. The sample population was derived from all New Zealand wineries registered in *The 2009 Australian and New Zealand Wine Industry Directory* (Winetitles, 2009) and it was the third such national wine tourism survey to be undertaken as part of a longitudinal study of wine tourism in New Zealand.

Survey Design

Survey questions were based on the template provided by the two previous New Zealand National Wineries’ Surveys (Hall & Johnson, 1998; Christensen et al., 2004). A question regarding biosecurity was added to the second New Zealand National Wineries’ Survey (Christensen et al., 2004), and this was expanded out into a series of questions that make up a section dedicated solely to biosecurity issues in the 2010 New Zealand National Wineries’ Survey. The determination of the current New Zealand wine industry stance towards sustainable practices as a form of innovation was introduced as a new section in the 2010 New Zealand National Wineries’ Survey which utilised the OECD (2005) framework as a basis for the questions. In addition, questions based on those in the *Innovation in New Zealand* survey (Statistics New Zealand 2007), were used in order to provide a benchmark of the wine industry with other agricultural-based industries and the tourism sector.

The 2010 New Zealand National Wineries' Survey was divided into seven main sections. The first two sections focused on the winery and visitor profiles. This was then followed by sections dedicated to biosecurity and sustainability, before innovation in the New Zealand wine tourism industry was examined. The final section which focused on tourism and marketing then led into a set of questions that were designed to gather respondent contact information. Modifications to questions were also based on the results of previous New Zealand wine tourism research (e.g. Hall & Johnson, 1998; Hall et al., 2000; Mitchell & Hall, 2001a, 2001b; Christensen et al., 2004).

Source data

The 2010 survey utilised primary data obtained from participants who represent each of the 511 vineyards located within New Zealand as per publically available winery listings published in *The 2009 Australian and New Zealand Wine Industry Directory* (Winetitles, 2009) who initially received the survey via email (491 wineries) or by post (20 wineries). It was originally envisaged that conducting the survey by email for a majority of the participants would yield a greater response rate than previous New Zealand National Wineries' Surveys had been able to obtain. This particular approach to data collection yielded an unsatisfactory response rate initially (with only 43 responses) as respondents appeared unwilling to provide industry sensitive information via an online survey. To counter this, a further postal mail out to all wineries who had not yet responded to the online survey was conducted, and this yielded a far more successful response rate; a further 82 wineries responded, which raised the response rate to 125 wineries (25 per cent) in total. Of these 125 wineries, 22 responded that they had in fact recently gone out of business since the publication of *The 2009 Australian and New Zealand Wine Industry Directory* (Winetitles, 2009) but as these were still judged as valid responses, these surveys were still included in the overall response rate. The remaining 103 wineries who responded then provided the data that this study was based upon. Of these 103 wineries, 70 reported offering cellar door sales, while the remainder did not. It is, however, important to note as a caveat to these figures that although all wineries who state that they engage in wine tourism through offering cellar door sales are open to visitors (either for cellar door sales or by appointment), that many of the wineries who then fall into the supposedly non-cellar door category are actually non-public in terms of their cellar door sales as most of them will also have visitors via invite or appointment.

Prior response rates to the 1997 survey obtained 111 responses out of 270 producers, giving a response rate of 41.1 per cent (Hall et al., 1998), whilst the second survey conducted in 2003 achieved a response rate of 121 usable responses out of the 419 wineries surveyed, resulting in a response rate of 28.9 per cent which compares favourably to other business surveys conducted within the New Zealand wine industry (Christensen et al., 2004).

Analysis

Analysis of the responses received to the 2010 New Zealand National Wineries' Survey was conducted using a combination of descriptive statistics to ascertain the degree of importance businesses within the New Zealand wine industry who actively engage in wine tourism at the cellar door place on innovation.

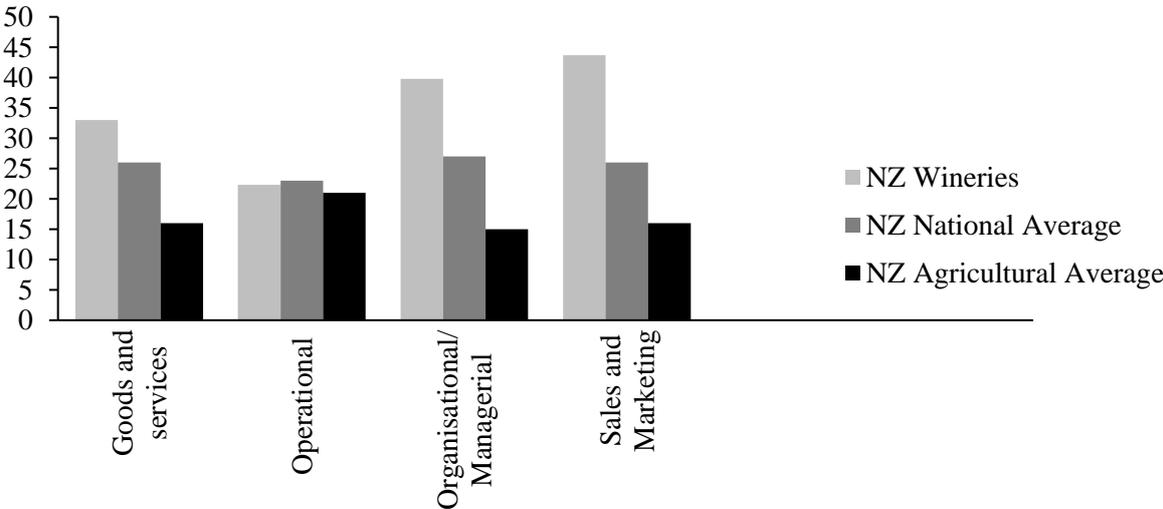
Findings

The results illustrate levels of innovation within the New Zealand wine industry, and compare these findings with the benchmark provided by the average overall 2007 New Zealand innovation levels and New Zealand agricultural sector innovation levels from the same period as reported in the *Innovation in New Zealand 2007* study (Statistics New Zealand, 2007). New Zealand wine industry figures are also compared to the average overall 2011 New Zealand innovation levels and New Zealand agricultural sector innovation levels as reported in the *Innovation in New Zealand 2011* study (Statistics New Zealand, 2011).

Introduction of innovations

The first set of questions on innovation asked respondents whether they had introduced any innovations over the two financial years prior to 2009. Results indicate that 67 per cent of respondents had not introduced any new or improved goods or services over this period, while the remaining 33 per cent stated that their vineyards had made changes to previously existing goods or services on offer (Figure 1). This figure is just over twice the New Zealand agricultural innovation average recorded in 2007 (16 per cent), and is also seven percentage points higher than the overall 2007 New Zealand innovation average of 23 per cent (Statistics New Zealand, 2007). Only 22.3 per cent of respondents reported that they had introduced new or significantly improved operational processes, which also includes sustainable production methods. 39.8 per cent of wineries had decided to implement new or significantly improved organisational or managerial processes in their businesses. This is much higher than the 2007 New Zealand agricultural innovation average of 15 per cent as well as the overall 2007 New Zealand innovation average of 27 per cent (Statistics New Zealand, 2007). The highest degree of innovation occurred in the implementation of new or significantly improved sales or marketing methods which was reported as 43.7 per cent, which is also much higher when than the 2007 New Zealand agricultural innovation average in this category of 16 per cent (Statistics New Zealand, 2007) and the overall 2007 New Zealand innovation average of 26 per cent (Statistics New Zealand, 2007).

Figure 1. Introduction of innovations over the two financial years prior to 2009



Source: Statistics New Zealand, 2007; own results.

Sales from significantly improved goods or services

New or significantly improved goods or services were reported by 37.9 per cent of respondents as having had no effect on sales in 2010 (Table 1). These figures fall well below the 2007 New Zealand agricultural innovation averages and 2007 New Zealand innovation averages (Statistics New Zealand, 2007). This category was reported as only two per cent nationally on average in 2007 (Statistics New Zealand, 2007), and in the agricultural sector was reported as being at 15 per cent on average for the same year (Statistics New Zealand, 2007).

Table 1: Percentage of sales from significantly improved goods or services (2009 financial year) compared with innovation in New Zealand agriculture 2007

Category	# 2010	% of Sales	NZ National Average	NZ Agricultural Average 2007
Zero	39	37.9%	2.0%	15.0%
10% or less	14	13.6%	43.0%	48.0%
20% or less	6	5.8%	23.0%	15.0%
30% or less	8	7.8%	10.0%	11.0%
40% or less	0	0	5.0%	0
41% - 100%	2	1.9%	7.0%	0
Don't know	34	33.0%	9.0%	8.0%

Source: Statistics New Zealand, 2007; own results

Improvements made to goods or services

Despite the emphasis given to networks and cooperation in much of the wine tourism literature (see above), only 8.7 per cent of wineries had opted to develop new or significantly improved goods or services in partnership with other businesses (Table 2). 30.1 per cent responded that had actually developed new or significantly improved goods or services themselves, which falls well below the 2007 New Zealand innovation average of 60 per cent (Statistics New Zealand, 2007). Few wineries had obtained any new or significantly improved goods or services from others and then implemented changes themselves. All wineries stated that if they had obtained new or significantly improved goods or services from others, then once these were implemented no further improvements were undertaken. These results potentially indicate that a degree of risk aversion exists within New Zealand wine businesses towards implementing innovation within existing goods and services, and supports the argument put forward by both Marks and Mortensen (2003) and Kaine et al. (2007) who cite that many businesses fear the impacts that failure can bring if an innovation is unsuccessful. This is understandable though given the large amount of capital and confidence required to implement innovation, and is also particularly pertinent at a time where the New Zealand wine industry is struggling due to oversupply issues (Deliottes, 2010).

Table 2: Significantly improved goods or services (based on NZ National Average 2007)

Method used to make improvement	Yes	No	NZ National Average 2007
Developed by this business	30.1%	69.9%	60.0%
Developed by this business in partnership with others	8.7%	91.3%	23.0%
Obtained from others and significant improvements made by your business	1.9%	98.1%	17.0%
Obtained from others and NO significant improvements made by your business	100%	0%	18.0%

Source: Statistics New Zealand, 2007; own results

Improvements made to operational processes

Of those wineries who had opted to introduce new or significantly improved operational processes (Table 3), 17.5% of businesses had developed their own innovations, which is well below the 2007 New Zealand innovation average of 62 per cent. 5.8 per cent of wineries reported that these significantly improved operational processes had been developed in partnership with others and 2.9 per cent reported that they had developed significantly improved operational processes obtained from other businesses. Reluctance to implement or adopt new or significantly improved operational processes once again touches on the unwillingness of some wineries to engage in collaboration and co-operation within existing clusters and networks (Kuah, 2002; Aylward & Turpin, 2003; Chiffoleau, 2005; Aylward, 2005a, 2005b, 2006b, 2006c; Chiffoleau et al., 2006; Bou et al., 2008; Cusmano et al., 2008; Dana & Winstone, 2008; Fleet, 2008; Taplin & Breckenridge, 2008; Touzard, 2010; Dana et al., 2011; Hira & Bwenge, 2011), although it is remarkable that the level of innovation reported here falls so far below the 2007 national average.

Table 3: Significantly improved operational processes

Method used to make improvement	Yes	No	NZ National Average 2007
Developed by this business	17.5%	82.5%	62.0%
Developed by this business in partnership with others	5.8%	94.2%	24.0%
Obtained from others and significant improvements made by your business	2.9%	97.1%	17.0%
Obtained from others and no significant improvements made by your business	1.0%	99.0%	18.0%

Source: Statistics New Zealand, 2007; own results

Improvements made to organisational and managerial processes

Significantly improved organisational and managerial processes (Table 4) were developed by 30.1 per cent of those surveyed, while 9.7 per cent stated that they developed these processes in partnership with other businesses. These results are well under half of those recorded as the 2007 New Zealand innovation averages in these areas, which were 68 per cent and 23 per cent respectively (Statistics New Zealand, 2007). 4.9 per cent of wineries reported that they

had obtained improved organisational and managerial processes from other business, while the 2007 New Zealand innovation average in this category was 18 per cent (Statistics New Zealand, 2007). 4.9 per cent also reported that they made no further improvements to these processes once they had obtained them from others in comparison to the 2007 New Zealand innovation average of nine per cent in the same area (Statistics New Zealand, 2007).

Table 4: Significantly improved organisational and managerial processes

Method used to make improvement	Yes	No	NZ National Average 2007
Developed by this business	30.1%	69.9%	68.0%
Developed by this business in partnership with others	9.7%	90.3%	23.0%
Obtained from others and significant improvements made by your business	4.9%	95.1%	18.0%
Obtained from others and NO significant improvements made by your business	4.9%	95.1%	9.0%

Source: Statistics New Zealand, 2007; own results

Improvements made to sales and marketing methods

Significantly improved sales and marketing methods (Table 5) were reported as having being developed by 35 per cent of wineries, which is well below the 2007 New Zealand innovation average of 53 per cent (Statistics New Zealand, 2007). 13.6 per cent indicated that these methods were developed in partnership with other businesses, which in comparison rated at 31 per cent for the 2007 New Zealand innovation average (Statistics New Zealand, 2007). Only 8.7 per cent stated that they had obtained improved sales and marketing methods from other businesses. This is low compared to the 2007 New Zealand innovation average of 17 per cent for this category (Statistics New Zealand, 2007).

Table 5: Significantly improved sales and marketing methods

Method used to make improvement	Yes	No	NZ National Average 2007
Developed by this business	35.0%	65.0%	53.0%
Developed by this business in partnership with others	13.6%	86.4%	31.0%
Obtained from others and significant improvements made by your business	8.7%	91.3%	17.0%
Obtained from others and NO significant improvements made by your business	3.9%	96.1%	15.0%

Source: Statistics New Zealand, 2007; own results

Reasons for innovation

Varied reasons were given for innovation (Table 6), with the need to establish or exploit new market opportunities given as the main reason (52.4 per cent). This was well above the 2007 New Zealand innovation average of 38 per cent (Statistics New Zealand, 2007) and the 2007 New Zealand agricultural sector innovation average of 32 per cent (Statistics New Zealand, 2007). Desires to increase market share and reduce costs ranked second equal (50.5 per cent),

followed by the need to reduce environmental impacts (47.6 per cent). Improvements to productivity and the creation of an increased responsiveness to customers both ranked third equal at 45.6 per cent. Other notable mentions were to increase productivity (41.7 per cent) and to reduce energy consumption (35 per cent). Reducing energy consumption was an area where New Zealand wineries really stood out against the 2007 New Zealand innovation average which was only 26 per cent (Statistics New Zealand, 2007) and the agricultural sector average, which was less than half that of the 35 per cent reported by wineries at 17 per cent (Statistics New Zealand, 2007).

Table 6: Reasons for innovation

Reason	Yes	No	Don't know	NZ National Average 2007	NZ Agricultural Average 2007
To improve productivity	45.6%	28.2%	26.2%	66.0%	64.0%
To increase productivity	41.7%	31.1%	27.2%	66.0%	64.0%
To reduce costs	50.5%	22.3%	27.2%	71.0%	28.0%
To increase responsiveness to customers	45.6%	26.2%	28.2%	59.0%	51.0%
To increase market share	50.5%	20.4%	29.1%	68.0%	45.0%
To establish/ or exploit new market opportunities	52.4%	24.3%	23.3%	38.0%	32.0%
To improve work safety standards	23.3%	43.7%	33.0%	24.0%	26.0%
To reduce energy consumption	35.0%	35.0%	30.1%	26.0%	17.0%
To reduce environmental impact	47.6%	27.2%	25.2%	33.0%	18.0%
To replace goods and services being phased out	5.8%	63.1%	31.1%	26.0%	35.0%

Source Statistics New Zealand, 2007; own results.

Sources of ideas and information for innovation

Sources of ideas and information for innovation (Table 7) primarily came from existing staff (52.4 per cent) or competitors and other businesses within the wine industry (33 per cent). New staff (32 per cent) and also suggestions from customers (31.1 per cent) were also cited as important, while ideas and information from books, journals, patent disclosures and the Internet are also a resource (29.1 per cent). Of interest is that Crown Research Institutes (government research bodies) and Government agencies both rated poorly as sources, polling at 6.8 per cent and 7.8 per cent respectively. The winegrowers' responses show substantial variation from both the 2007 and 2011 New Zealand innovation surveys with wineries consistently falling below national averages on sourcing ideas. These findings also support the notion that there is a distinct lack of institutional support currently available to New Zealand wineries specifically designed to encourage innovation, or alternatively a lack of willingness from winegrowers to access expertise. Such support has been noted as an important factor in increasing levels of innovation (Simpson, 2005; Aylward, 2006a; Guthey, 2008; Powrie & O'Connor, 2010; Hira & Bwenge, 2011).

Table 7: Sources of ideas and information for innovation

Source	Yes	No	Don't know	NZ National Average 2007	NZ National Average 2011
New staff (appointed in the last 2 years)	32.0%	64.1%	3.9%	51.0%	44.0%
Existing staff	52.4%	45.6%	1.9%	70.0%	69.0%
Other businesses within the business group (e.g. subsidiaries or parent companies)	14.6%	82.5%	2.9%	31.0%	36.0%
Customers	31.1%	65.0%	3.9%	57.0%	54.0%
Suppliers	30.1%	68.0%	1.9%	47.0%	41.0%
Competitors and other businesses from the same industry	33.0%	63.1%	3.9%	45.0%	69.0%
Businesses from other industries (not including customers or suppliers)	20.4%	74.8%	4.9%	22.0%	23.0%
Professional advisors, consultants, banks or accountants	27.2%	68.9%	3.9%	44.0%	55.0%
Books, journals, patent disclosures or the Internet	29.1%	65.0%	5.8%	41.0%	51.0%
Wine shows, festivals or conferences	22.3%	71.8%	5.8%	46.0%	36.0%
Industry or employer organisations	19.4%	74.8%	5.8%	30.0%	50.0%
Universities or polytechnics	11.7%	83.5%	4.9%	9.0%	20.0%
Crown Research Institutes, other research institutes or associations	6.8%	88.3%	4.9%	7.0%	34.0%
Government agencies	7.8%	86.4%	5.8%	13.0%	22.0%

Source Statistics New Zealand, 2007, 2011; own results

Activities to support innovation

There was a relative lack of activities undertaken to support innovation amongst respondents. When compared against the 2007 and 2011 New Zealand innovation averages (Table 8), the main activities listed that were done in support of innovation were the acquisition of new computer hardware or software and the design of product labelling which were both at 18.4 per cent, with the acquisition of new computer hardware or software well below the 2007 national averages of 46 per cent and 38 per cent respectively (Statistics New Zealand, 2007). The figures reported for design tended to reflect these averages with 17 per cent of activities in this area undertaken to support innovation and seven per cent were not. The introduction of new varieties of grapes and viticultural techniques were both reported as being undertaken by only 16.5 per cent of those who were surveyed. Marketing the introduction of new goods and services (15.5 per cent) along with the purchasing of new machinery and equipment (15.5 per cent) were noted as having been done to support innovation, but still fell short of the 2007 New Zealand innovation averages by comparison (Statistics New Zealand, 2007). The pattern of these results when also compared to the 2011 New Zealand innovation averages suggest some resistance from wineries towards activities supporting innovation.

The underlying theme regarding innovation in the 2010 wine survey was that unless there was a proven track record for an innovative process which could enhance the managerial and organisational objectives of the wineries involved (OECD et al., 2005; Yuan et al., 2006), or

provide more efficient organisational and marketing objectives through product innovations (OECD et al., 2005; Hjalager, 2009), then wineries tended to avoid innovation to a degree. This may help explain why there appears to be a cautious approach within the industry, particularly towards areas such as the adoption of sustainable methods of wine production. This could be combated through SWNZ introduced agent assistance programmes (Bessant et al., 2009) relating to sustainable methods; and could address this perceived gap in innovation capability within the New Zealand wine industry where “firms may have a general awareness of the potential of the innovation on offer but do not see its relevance or applicability to them” (Bessant et al., 2009, p. 7).

Table 8: Activities to support innovation

Activity	Done to support innovation	Done, though not to support innovation	Not Done	Don't know	Done to support innovation (NZ Average 2007)	Done to support innovation (NZ Agricultural Average 2011)	Done to support innovation (NZ Average 2011)	Done to support innovation (NZ Agricultural Average 2011)
Introduce a new variety of grape	16.5%	1.9%	62.1%	19.4%	-	-	-	-
Use of new viticultural techniques	16.5%	13.6%	45.6%	24.3%	-	-	-	-
Acquire new machinery and equipment	15.5%	12.6%	52.4%	19.4%	29.0%	18.0%	16.0%	17.0%
Acquire new computer hardware and software	18.4%	20.4%	45.6%	15.5%	38.0%	22.0%	22.0%	17.0%
Acquire other knowledge (e.g. outsourcing for new techniques or intellectual property)	13.6%	6.8%	64.1%	15.5%	14.0%	5.0%	7.0%	2.0%
Implement new business strategies or management techniques	16.5%	10.7%	48.5%	24.3%	35.0%	17.0%	16.0%	12.0%
Implement organisational restructuring	7.8%	7.8%	53.4%	31.1%	22.0%	11.0%	11.0%	8.0%
Design (e.g. graphic design on labelling of bottles)	18.4%	7.8%	44.7%	29.1%	17.0%	5.0%	9.0%	2.0%
Market the introduction of new goods and services	15.5%	3.9%	50.5%	30.1%	33.0%	13.0%	9.0%	3.0%
Market research	9.7%	11.7%	47.6%	31.1%	20.0%	10.0%	9.0%	3.0%

Significant changes to existing marketing strategies	14.6%	12.6%	44.7%	28.2%	17.0%	8.0%	8.0%	3.0%
Employee training	13.6%	20.4%	38.8%	27.2%	38.0%	26.0%	21.0%	12.0%

Source: Statistics New Zealand, 2007, 2011; own survey results

Conclusion: New Zealand wineries' participation in innovation

Unless there was a proven track record for an innovative process which could enhance the managerial and organisational objectives of the wineries involved (Yuan et al., 2006), or provide more efficient organisational and marketing objectives through product innovations (Hjalager, 2009), then New Zealand wineries appeared to have a cautious approach towards innovation, particularly in the adoption of sustainable methods of wine production. However, for those wineries which did innovate, the reasons were related to increasing productivity, reducing energy consumption, and reducing environmental impact. Indeed, the environmental and energy efforts of the winegrowers were larger than those of other sectors of the New Zealand tourism industry (Hall, 2009) as well as New Zealand industry overall.

The relationship between innovation and business size also indicated an emergent trend. Business size was measured through the number of full time, part time and casual workers that each winery employed, and was also gauged by the amount of wine produced per annum by the wineries concerned. Based on these figures it is of interest to note that larger wineries were found to be more innovative than the smaller wineries that were surveyed. Nevertheless, the overriding impression from this survey is of a sector that, despite attention in the wine tourism literature to collaboration and networks, remains relatively insular with respect to innovation activities.

The New Zealand wine industry is still in a relatively formative phase compared to its well established European counterparts. As the industry matures, undoubtedly there will be challenges, and the true measure of the future success of the New Zealand wine industry in terms of innovation will be how it copes with these challenges; the industry could either chose to maintain the status quo, or meet these challenging times through developing a direct dialogue with their customers in order to maximise the opportunities in terms of sales and brand promotion that wine tourism offers.

The generally positive attitude of the wine industry towards tourism does indicate that there is still unrealised potential within the industry, provided that it is both safeguarded against external threats, and is also promoted correctly through the appropriate channels in order to assure future growth. Increased knowledge sharing needs to occur so that the lessons learnt by overseas wine regions need not be repeated by the New Zealand wine industry as it has already experienced substantial economic turbulence. Proper institutional support and promotion is needed to take New Zealand wine tourism to the next level if it is to move beyond the current group of established pioneers and small-scale hobbyists who permeate the industry.

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Appendix L: Between the vines: Wine tourism in New Zealand

Tim Baird and C. Michael Hall

Introduction

New Zealand's wine industry has undergone significant growth and change since the 1970s when wine tourism first emerged. Wine tourism is defined as "visitation to vineyards, wineries, wine festivals and wine shows for which grape wine tasting and/or experiencing the attributes of a grape wine region are the prime motivating factors for visitors" (Hall 1996: 1). Wine tourism extends far beyond visiting a vineyard solely to taste wine with the developed wine tourism product typically including wine (and food) festivals, wine trails, and potentially other wine attractions such as museums and shows (Mitchell and Hall 2006). Beyond the immediately obvious attraction of wine tasting, it also includes a combination of intertwined elements such as the atmospherics, staff, the setting and intangible elements of the experience that are embedded in the destination experience (O'Neil and Charters 2000; Mitchell and Hall 2006; McDonnell and Hall 2008).

Despite the importance of wine tourism at a destination level the vast majority of research on wine tourism is undertaken at wineries and in particular at the 'cellar door', the term commonly used to refer to a facility at a winery that enables visitors to sample wines, usually in conjunction with learning about the winery and making purchases (Hall and Mitchell 2008) – even if these days it is very rarely in a cellar! Indeed, having a wine cellar or cave as in the case of Johanneshof Cellars in Marlborough and Gibbston Valley Wines in Central Otago becomes an attraction in its own right. In New Zealand there is often no fee for tasting, or a fee is returned if wine bottles are purchased, although it is a common practice in the USA where approximately 50% of cellar doors charge a tasting fee (Barclay 2006). For the winery, the cellar door provides advantages of enhancing sales and profits, establishing relationships, and creating brand-loyal customers (O'Neill and Charters 2000), and provides the economic base for many small wineries (Hall 2012), although the use of cellar door sales may change over time as wineries focus on other distribution channels to customers. Furthermore, because of factors such as location and level of required investment in capital and/or time wine tourism may not be appropriate for all wineries. Some of the advantages and disadvantages of wine tourism at the level of individual wineries are summarised in Table 1.

Table 1. Summary of advantages and disadvantages of wine tourism at the winery level

Advantages	Disadvantages
Consumer exposure	Increased costs and management time
Brand awareness at multiple scales and potential loyalty	Inability to significantly increase sales, ie. Because of location, accessibility
Customer relationships	May not be the right market from the perspective of broader business products
Better margins	Capital required
Additional sales outlet	Issues associated with seasonality
Market intelligence on products and consumers	Potential risks from biosecurity breaches
Education of consumers	Potential risks of breaches to health and safety requirements
New sales opportunities via direct sales and/or new B2B relationships, ie wineries to restaurants and food vendors	Opportunity costs

Sources: Hall et al. 2000; Hall and Mitchell 2001; Nummedal and Hall 2006; Hall and Sharples 2008.

At the regional/destination level there are also a range of advantages and disadvantages. In terms of the potential contributions to a region or destination:

- The high profile of some wines and wineries that attract tourists can provide other regional businesses opportunities through association with a quality product
- Wine tourism can help differentiate a region's position in the tourism marketplace if connected with local wines and can also be integrated with broader branding strategies
- Wine tourism is an attraction in its own right that can help extend the range of reasons for visiting a destination. Wine tourism may therefore help extend length of stay and increase visitor expenditure on local product. For example, Walla Walla, the most prominent wine county in Washington, USA, slightly less than 17 per cent of all

restaurant and approximately 40 per cent of all hotel revenue is tied to the wine industry (Storchmann 2008).

The Wine Tourism Context

If one was to use the profile of New Zealand wines in wine and food media and international wine shows, wine and wine tourism in New Zealand wine industry appears to be enjoying a climate of unprecedented growth and success (New Zealand Wine 2009a). However, the reality is that the New Zealand wine industry is also fraught with problems concerning fluctuating profit levels (Cholette *et al.* 2005), production (New Zealand Wine 2012; New Zealand Winegrowers 2012) and an increasingly competitive international wine market (Hall and Mitchell 2008). A New Zealand Vintage 2009 benchmarking survey conducted by Deloitte (2010: 5) even suggested that “Without a doubt, 2009 has been a turbulent year for the New Zealand wine industry, with the impacts of oversupply, together with the largest economic downturn in 20 years, affecting all involved in the industry”, and this trend appears to be here to stay. The Vintage 2011 benchmarking survey conducted by Deloitte (2012: 23) offered the following perspective regarding the current state of the New Zealand wine industry:

We are not seeing similar reductions in inventory levels [to Vintage 2011] and in some cases inventory is actually increasing. This implies that wineries have carried through inventory from their Vintage 2011 production into 2012 inventory due to sales not being as high as expected (i.e. demand wasn't as high as expected). The positive side of this situation is that despite the reduced harvest, wineries will have sufficient inventory to meet demand over the next year. This does highlight the risk however that any large harvests in the future need to be matched against market demand to avoid serious issues for the New Zealand wine industry.

Although there has been significant growth in production and the number of producers it is with great caution that this chapter approaches the idea put forward by Hughey *et al.* (2005) that a boom period has occurred in the New Zealand wine, with an industry with \$NZ 100 million worth of annual exports in 1999 growing into one that a decade on is now worth well over one billion in export dollars per annum. This growth is a double-edged sword however, as Euromonitor International (2012: n.p.) predict that “while wine consumption is expected to

increase over the forecast period, wine over-supply conditions are also expected to persist into the forecast period until at least 2013.” The analogy offered by Cooper (2002: 25) of an “old rollercoaster ride, soaring and plunging through successive periods of growth and optimism, decline and disillusionment” is one that still serves to accurately describe the course of the local wine industry to the present day.

The growth in wine production has seen an explosion in the number of registered vineyards in New Zealand with 511 listed in the 2009 Australian and New Zealand Wine Directory (Winetitles 2009) compared with 270 listed wineries in 1997 (Hall & Johnson 1998) and 419 in 2003 (Christensen *et al.* 2004). By 2012 it is estimated that there were approximately 700 wineries in the country. This same period has also seen a rise in the amount of interest in locally produced wine products available on the New Zealand market (New Zealand Wine 2009b). This may appear to be good news, but with growth comes challenges. For example, Deliottes (2010: 21) suggest: “It would seem that the dialogue with customers is being conducted by the exporters and distributors on behalf of the wineries, thus creating a clear distinction between the *winemakers* and the wine *sellers*. The winemaker’s dialogue with the end consumer remains a significant challenge”. When this observation is considered in the light of Euromonitor International (2012: n.p.) comments that “the wine over-supply issue continued to impact New Zealand, with cheaper domestic and imported wine flooding the country. This led to significant trading down on the part of consumers from higher quality to lower quality wine during the period”, it is clear that many New Zealand wineries need to focus on engaging customers. As Deliottes (2010: 21) contend, “as wine is still largely a luxury good and the fact New Zealand wishes to remain a premium/luxury producer of wine then maintaining interactions with customers is considered crucial to the industry’s ongoing development.” Wine tourism therefore provides a very clear opportunity for the winemakers to also be the wine sellers (Hall 2012) as well as build new and reinforce existing relationships with consumers.

It is estimated that over 475,000 wine international and domestic tourists now visit New Zealand wineries annually (Ministry of Economic Development 2009). The bulk of winery visitation is made up of domestic wine tourists (Mitchell 2004), who account for approximately 63 per cent of this figure (Ministry of Economic Development 2009), and international visitors make up the remaining 37 per cent (Ministry of Economic Development 2009). Table 2 indicates the estimated extent of visitation to New Zealand wineries by

international tourists. However, the profile of the winery visitor will vary according to the wine region as well as the winery, although there is only limited comparable data on regional visitation with the proportion of ‘local visitors’ compared to ‘non-local’ being greatly influenced by the location of wine regions relative to urban centres (Table 3). This is nevertheless significant for wineries and their capacity to attract visitors given the substantial different potential market areas for wineries near a centre such as Auckland as opposed to those in Central Otago.

Table 2: International wine tourist visitation of New Zealand wineries 1998-2012

Year (ending September)	Total number of international visitors to New Zealand	Estimated total number of international visitors to New Zealand wineries	Estimated total number of international visitors to NZ overall who visit wineries (%)
1998	1 322 972	52 919	4%
1999	1 413 957	56 558	4%
2000	1 547 856	61 914	4%
2001	1 710 783	85 539	5%
2002	1 723 587	103 415	6%
2003	1 870 462	130 932	7%
2004	2 118 286	148 280	7%
2005	2 204 075	154 285	7%
2006	2 173 803	195 642	9%
2007	2 255 060	180 405	8%
2008	2 238 860	179 109	8%
2009	2 201 883	220 188	10%
2010	2 297 309	229 730	10%
2011	2 316 331	208 469	9%
2012	2 397 304	215 757	9%

Source: Derived from Ministry of Business, Innovation and Employment 2012.

Table 3: Comparison of place of residence of winery visitor by wine region

Region	Within Region %	Outside Region* %	International %
Auckland	77.2%	22.8%	10.9%
Bay of Plenty	22.9%	77.1%	0.0%
Canterbury	62.5%	37.5%	25.0%
Central Otago	7.5%†	92.5%	19.2%
Hawkes Bay	11.8%	88.2%	15.3%
Marlborough	8.9%	91.1%	23.5%
Nelson	31.1%	68.9%	1.9%
Northland	19.2%	80.8%	11.5%
Waipara	67.2%	32.8%	8.3%
Wairarapa	9.2%	91.8%	9.2%

* Includes international visitors. † Does not include Dunedin, which is in the Otago region, but is approximately 2.5 hours drive from the nearest Central Otago winery.

Source: Mitchell and Hall 2001c; Mitchell 2004; Toothill 2008

New Zealand research suggests that females make up the majority of winery visitors and are significant influencers of wine tourism (Mitchell and Hall 2006). Nearly two-thirds (64.8 per cent) of the participants who completed a survey of winery visitors in the Waipara region in the South Island of New Zealand were female (Tootill 2008). This is substantially higher than the female majority (54.1 per cent) that was found in Mitchell's (2004) national survey and the slight female majority (51.7 per cent) that was found in Alonso's (2005) study. With respect to age Tootill (2008) found that 60.2 per cent of the participants in his study were between the ages of 35 and 54. These results are similar to Mitchell (2004) who found three out of four participants (75.2 per cent) were aged between 25 and 55, although Alonso (2005) reported that 62.6 per cent of his respondents were between the age of 31 and 60. Both Mitchell (2004) and Toothill (2008) reported that about a fifth of winery visitor in their surveys earned more than NZ\$80,000 per annum.

The growth in wine tourism does not come without problems however, and this chapter focuses on the potential issues raised within the realms overall winery attitudes towards wine

tourism (Hall *et al.* 1997; Hall *et al.* 2003; Thomas 2005; Alonso 2010). This chapter provides a comprehensive overview of wine tourism in New Zealand and uses the results of the 2010 New Zealand wine tourism survey as compared to the results of the two previous surveys to illustrate some of the changes in wine tourism in New Zealand. The third iteration of the survey allows for longitudinal information to be presented. This comparative analysis of the survey time series provides value to the existing New Zealand wine tourism research by illustrating how wineries in New Zealand have used tourism as part of their business strategy. This strategy not only provides an umbrella for the various revenue streams that wineries engage in (such as cellar door sales, outdoor concerts and regional wine and food festivals), but also encompasses a growing awareness of environmental issues such as biosecurity (Hall 2003, 2005) and sustainability (Gabzdylova *et al.* 2009; Baird and Hall 2013) (see Hall and Baird Chapter X for a more detailed discussion).

Historical context of New Zealand wine tourism

Given its characteristics in some countries as a 'sin' product, regulation is critical to understanding where and when people can drink alcohol. Without legal on-site sales and consumption wine tourism cannot flourish, as suggested by the experience of wineries in more constrained wine jurisdictions (Malm *et al.* 2013). Regulatory changes that allowed patrons to legally take wine into cafés or buy directly from the cellar door at New Zealand wineries were first introduced in 1976 (Hadyn and Talmont 1997). This can be regarded as one of the first landmarks of cultural change which made even the idea of wine tourism a possibility for New Zealand winegrowers. The appetite for wine tourism was slow to gain traction amongst winery owners though (Hall and Johnson 1998). It is clear from the outset that New Zealand wine growers approached the idea of wine tourism with a degree of skepticism and cynicism, and it would take the development of a higher level of sophistication (Mitchell and Hall 2006) within the local wine industry over the next two decades for the concept of wine tourism to be even seriously considered as a tool for educating consumers, encouraging brand loyalty and supplying an attractive additional source of revenue for wineries.

Although many overseas wineries in both Old and New World wine producing regions may have had a long history of cellar direct sales (Hall *et al.* 2000). The rate of adoption of wine tourism was much slower in New Zealand primarily through an initial lack of institutional

support and expertise, which particularly affected smaller winegrowers who were often unable afford to access existing local distribution channels (Hall and Johnson 1998). This low level of support also hampered exports of New Zealand produced wine by smaller companies lacked the necessary capital, experience and knowledge of how to operate competitively amongst the same international distribution networks that larger companies employed (Hall and Johnson 1998). As a consequence, smaller New Zealand based wineries gravitated towards cellar door sales in order to sell directly to visitors in order to provide income and maintain or develop their business (George 1996; Hall and Johnson 1998; Beverland *et al.* 1998a, 1998b; Beverland 1999a, 1999b, 1999c, 2000; Christensen *et al.* 2004) and approach continued to the present day (Hall and Mitchell 2008; Treloar *et al.* 2008; Charters *et al.* 2009; Fountain 2011). Perhaps the biggest obstacle towards wine tourism in New Zealand though has been the attitude of wine producers themselves towards it; Hall and Johnson (1998: 3) refer to this in their summary of the first edition of the New Zealand National Wineries' Survey: "Tourism has a key role to play in providing a customer base for the many New Zealand wineries that would otherwise find distribution prohibitively expensive. However, many wine producers do not perceive themselves as offering a tourist product and are unaware of how to best attract visitors to their vineyard".

Christensen *et al.* (2004) found that this attitude towards wine tourism had shifted somewhat in the 2003 iteration of the survey, and suggested that a more positive attitude was due to a "greater awareness of the value of wine tourism" (Christensen *et al.* 2004: 6). The development of local wine and food tourism networks which had occurred over this period was also noted as significant, and this in itself pointed towards a greater degree of industry confidence where the perception was now one where some New Zealand wineries were beginning to recognise "wine tourism as a significant opportunity to increase their wine sales" (Christensen *et al.* 2004: 6).

The New Zealand National Wineries' Surveys

The survey used in this chapter was based on the template of the two previous New Zealand National Wineries' Surveys (Hall and Johnson 1997; Christensen *et al.* 2004). The initial survey questions (Hall and Johnson 1997) were created by the researchers involved, and also utilised questions posed in previous New Zealand (e.g., Reid 1990), and international studies (e.g., Golledge and Maddern 1994; Dodd and Bigotte 1995; Maddern and Golledge 1996;

Macionis 1997). A question regarding biosecurity was added to the second New Zealand National Wineries' Survey (Christensen *et al.* 2004). Questions with respect to sustainable practices as a form of innovation were introduced as a new section in the 2010 survey. This section utilised the OECD *et al.* (2005) innovation survey framework and the *Innovation in New Zealand* survey (Statistics New Zealand 2007) in order to benchmark the level of innovation in the wine industry with the New Zealand agricultural sector as well as with the national levels of innovation. Further changes and revisions were also made where relevant based on the results of previous New Zealand wine tourism research (Hall *et al.* 2000; Mitchell and Hall 2001a, 2001b; Christensen *et al.* 2004; Alonso *et al.* 2007, 2008).

The 2010 survey utilised primary data obtained from participants who represent New Zealand wineries listed in *The 2009 Australian and New Zealand Wine Industry Directory* (Winetitles 2009) who initially received the survey either via email or post. The overall response rate was 125 wineries (24.3 per cent) in total. Of the 125 wineries, 22 responded that they had recently gone out of business since the publication of *The 2009 Australian and New Zealand Wine Industry Directory* (Winetitles 2009). The remaining 103 wineries who responded provided the primary data that this study was based upon. With respect to prior response rates the 1997 survey obtained 111 responses out of 270 producers, giving a response rate of 41.1 per cent (Hall and Johnson 1997), whilst the second survey conducted in 2003 achieved a response rate of 121 usable responses out of the 419 wineries surveyed (28.9 per cent response rate) (Christensen *et al.* 2004). The response rate of the present survey compares very favourably to the 5.5 per cent response rate (32 survey participants) of the Vintage 2009 annual wine industry benchmarking survey (Deliottes 2010) and the 6 per cent response rate (36 survey participants) of the Vintage 2011 annual wine industry benchmarking survey (Deliottes 2012).

New Zealand wineries' attitudes towards wine tourism

A noticeable decline in cellar door sales between 1997 and 2010 (Table 4) coupled with possible industry skepticism towards the importance of cellar door sales (Table 5) suggest that the potential opportunities that could be available via wine tourism and cellar door sales appear to be undervalued by winery owners. Nevertheless, the perception that cellar door visitors do not buy much wine actually fell to the lowest level it had recorded across all three

surveys (see below), so clearly the cellar door still represents a viable source of revenue for wineries. In terms of the characteristics of wineries that do offer cellar door sales it was of particular interest to note that the ownership status and the age of the winery were both significant factors in determining whether cellar door sales were available, with older wineries more likely to offer sales at the cellar door. Also of interest here was the fact that the actual size of the winery concerned was not found to be a significant characteristic in terms of whether cellar door sales were actually offered.

Table 4: Number of wineries that offer cellar door sales

	No. 1997	% 1997	No. 2003	% 2003	No. 2010	% 2010
Offer	92	83%	80	66.4%	70	68%
Do not offer	19	17%	41	33.6%	33	32%
Total	111	100%	121	100.0	103	100.0

Table 5: Cellar door sales importance to winery business

Statement	Yes	No. 1997	% 1997	Yes	No. 2003	% 2003	Yes	No. 2010	% 2010
Cellar door sales are important my business	78	104	75.0%	54	82	65.9%	59	103	57.2%

There is a decline in the charging of tasting room fees across the survey time series (Table 6). This may be because there is a desire on the part of wineries to encourage direct purchases of wine and encourage repeat visitation (Madonna 1999). It is also possible that not paying for tastings has now become the expected norm by consumers, although in some situations charging for tasting may still be used by wineries as a means of positioning their wines in a more exclusive and/or high quality bracket. Nevertheless, cellar door experiences can help customers to overcome their resistance to purchasing unknown brands (Dodd 1995), differentiate a winery on the basis of the experience offered (Dodd and Gustafson 1997; Charters and O’Neill 2000, 2001; O’Neill and Charters 1999, 2000; O’Neill and Palmer 2004; Telfer 2001; Pan *et al.* 2008) and encourage what is termed as the “multiplier effect” (Bruwer *et al.* 2012: 57) amongst visitors who may then go on to refer other friends and family to visit

the winery (Maddern and Golledge 1996; Paterson 2000; Jayawardena *et al.* 2008). The growth in the number of winery restaurants in the 2010 survey reflects that food has also become a real drawcard in combination with the wine tourism experience. The increase in the level of company branded promotional material and regional merchandising available also supported the view that wineries were very interested in the promotion of positive memories and recollections of the cellar door in the post-visit experience (Mitchell and Hall 2001c; Barber *et al.* 2008; Hall and Mitchell 2008).

Table 6: Winery charges tasting fees

	No. 1997	% 1997	No. 2003	% 2003	No. 2010	% 2010
Yes	53	51.0%	41	34.4%	26	25.2%
No	51	49.0%	79	65.6%	77	74.8%
Total	104	100%	121	100.0%	103	100.0%

In general the positive attitude towards wine tourism that was noted by Christensen *et al.* (2004) in the 2003 survey appears to still be prevalent, with the majority of New Zealand wineries agreeing that tourism was important to the wine industry, and that if promoted correctly could bring more visitors to their winery and help with wine sales (Table 7). A decline however was noticed in wineries' attitudes towards the value of tourists, although tourism was still seen to be providing significant marketing opportunities, and helped New Zealand wineries to enhance awareness of both their products and brands. Tootill (2008) found that less than half (48.2 per cent) of participants purchased wine from the winery at which they completed the survey. 36.3% purchased either 1 or 2 bottles, with the remaining 11.9% of participants purchasing between 3 and 12 bottles. In contrast Mitchell (2004) reported that only 13.8% of visitors did not purchase any wine during their visit, with 48.6% of participants purchasing 1 or 2 bottles. The Waipara results showed a mean of 1.19 bottles purchased per visitor which was significantly lower than the mean of 3.21 bottles in Mitchell's (2004) survey. With respect to the level of expenditure at the winery Mitchell (2004) found that the majority of respondents spent between NZ\$10 and NZ\$50 per visit to any winery, with a similar figure being identified in Tootill's (2008) Waipara survey results although the average level of expenditure at a Canterbury winery was less than that elsewhere in New Zealand.

The cellar door is often a main source of sales for many small wineries and is also often integral to business development in the early stages of the business life-cycle. In the United States it was estimated that wineries producing less than 5000 cases made 68% of sales through the cellar door, and those producing 5000 to 49,000 cases had 42% of sales through the same channel (Barclay 2006). This has also been the case for many small wineries in New Zealand (Hall and Johnson 1998; Hall 2004; Heyworth 2007). Mitchell (2004) found that in New Zealand, on average, cellar doors bring in 15-20% of all wine sales, and that there are instances of wineries that make up to 75% of their sales through the cellar door. It has also been reported that in the Canterbury region it is not uncommon for wineries to make over half their revenue through the cellar door (Schuster *et al.* 2002; Heyworth 2007).

Educational aspects (Table 8) were also seen as important through providing services such as winery tours and wine tasting (O'Neill and Charters 1999, 2000; Charters and O'Neill 2000, 2001; Dodd and Beverland 2001; Pan *et al.* 2008; Lockshin and Knott 2009) which have remained prominent throughout the survey time series as New Zealand wineries seek to engage with their visitors during their winery experience and providing a basis for future wine purchases.

Table 7: Winery attitudes towards tourism

Statement	1997 Strongly agree/ agree	2003 Strongly agree/ agree	2010 Strongly agree/ agree
Cellar door visitors do not buy much wine	25.9%	29.4%	23.3%
Tourists are valuable	65.5%	82.6%	77.7%
Tourism attracts a wide range of customers to my winery	69.1%	69.1%	57.3%
Tourism provides significant marketing opportunities	56.1%	69.4%	58.2%
Tourism positively impacts the sales of my wine offshore	n/a	45.7%	35.9%
Tourism does not contribute greatly to my business success	28.9%	28.5%	29.2%
The overall benefits of tourism outweigh the negative impacts	68.8%	77.1%	54.4%
Tourism increases awareness of my winery through word of mouth	n/a	n/a	63.1%
Tourism does not attract the kind of visitors I want to my winery	21.7%	13.3%	12.6%

Table 8: Wine tourism helps to educate my customers

	2003	2010
Strongly Agree	17.7%	19.4%
Agree	52.1%	37.9%
Unsure	20.8%	34.0%
Disagree	7.3%	6.8%
Strongly Disagree	2.1%	1.9%

Visitor Profile

Visitor market segmentation figures (Figure 1 and Table 9) based on the typology devised by Hall (1996) indicated that most New Zealand wineries in the 2010 survey perceived the majority of their visitors (62.4 per cent) to be ‘Wine interested’ followed by those visitors who were categorised as being a ‘Wine lover’ (29.7 per cent), while those who were regarded as ‘Wine curious’ ranked third at 10.2 per cent. The same trend applied in the 2010 survey to the 2003 survey, so this suggests that wine tourists are not necessarily more knowledgeable than they were in 2003. However, as noted above, there has been an increase in the

importance placed by New Zealand wineries on educating wine tourists in tasting rooms as well as the rise in educational opportunities represented by wine and food festivals (Hall and Sharples 2008), which clearly appears to be aimed at turning those visitors who are ‘Wine interested’ into visitors who in the future could be classified as a knowledgeable ‘Wine lover’. Such initiatives may be especially significant given the need to engage the 18-29 year age group as future wine consumers (Beverland 2001; Treloar *et al.* 2004; Fountain and Charters 2010; Fountain 2011).

Figure 1: Visitor market segments

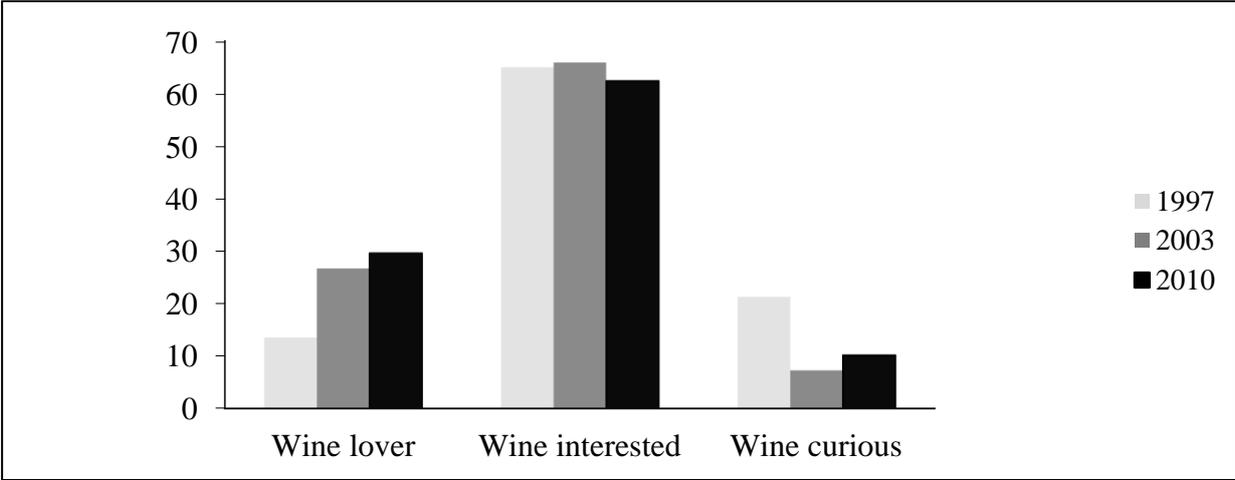


Table 9: Perceived visitor interest in wines

Year	Wine lover	Wine interested	Wine curious
1997	13.6%	65.0%	21.4%
2003	26.8%	65.9%	7.3%
2010	29.7%	62.4%	10.2%

Conclusion

The New Zealand wine industry is still in a relatively early stage compared to its well-established European counterparts. This applies even more to wine tourism and cellar door sales than it does to winegrowing. Nevertheless, New Zealand and Australia have been at the forefront of wine tourism research (Mitchell and Hall 2006). Wine tourism has become an important element of promoting New Zealand tourism internationally. However, there are

longstanding perceptions in the wine industry that tourism benefits much more from wine tourism and cellar door visits than does wineries and wine sales. Unfortunately, such thinking often fails to see wine tourism in the larger context of wine marketing and business strategies, especially for those wineries that wish to maintain a presence in the domestic market (Hall and Mitchell 2008).

Nevertheless, the generally positive attitude of the wine industry towards tourism does indicate that there is still unrealised potential within the industry, provided that it is both safeguarded against undesirable impacts of tourism, such as the potential for the introduction of disease (see Hall and Baird, Chapter X), and is also promoted appropriately in order to assure future growth. However, increased knowledge sharing needs to occur so that the lessons learnt by overseas wine regions need not be repeated by the New Zealand wine industry as it has already experienced substantial economic turbulence. Indeed, it is possible that appropriately configured then wine tourism may potentially provide something of a cushion to other pressures on wine sales but it is important that expectations are realistic as there are some wineries for whom because of location, for example, would not benefit from focussing on cellar door sales. Improved institutional support, research and promotion, including better cooperation and networking between the wine and tourism industries at various levels, would therefore appear invaluable to ensuring that wine tourism can appropriately assist the wine industry to further develop in New Zealand.

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Appendix M

New Zealand winegrowers attitudes and behaviours towards wine tourism and sustainable winegrowing

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Received: 1 February 2018; Accepted: date; Published: date

Abstract: There are significant economic, environmental, social, and marketing issues which exist from the supply-side perspective in response to sustainability. This study examines New Zealand winegrowers in terms of their attitudes and behaviours towards wine tourism and sustainable wine production. A national survey was conducted at the end of 2015 and was the fourth such survey to be undertaken as part of a longitudinal study of wine tourism in New Zealand. This survey drew on issues of wine and biosecurity, climate change, and eco-labelling as well as wine tourism. These were examined within the context of three key drivers of sustainability: the physical aspects of sustainable wine production; the internal drivers within wine businesses for the adoption of sustainable practices; and the external regulatory aspects which govern the adoption of sustainable wine production practices. The findings indicate that there were substantial concerns with the perceived value provided by both wine tourism and sustainable winegrowing practices. These exist at both the firm level and with the governing bodies responsible for implementing sustainable winegrowing initiatives. Unless this perception of the value of sustainability within the New Zealand wine industry is altered in the future, it appears that there will continue to be an ongoing issue as to how sustainable winegrowing initiatives are implemented.

Keywords: wine tourism; sustainable winegrowing; rural development; regional development; biosecurity; branding; partial-industrialization; innovation; climate change

1. Introduction

Even though wine, as well as wine regions and businesses, is often promoted in terms of its environmental attributes, winegrowing is an industrial process with resource use and waste. In addition to water and land use winegrowing may also have substantial chemical inputs, such as biocides and fertilisers, and is also responsible for emissions, including from the transport of wine from vineyard to the end consumer, often based in foreign markets, referred to as 'wine miles' [1]. The industrial dimensions of wine and its potential negative environmental externalities are distant from the portrayal of wine as an 'authentic' and 'natural' artisanal product. Nevertheless, there appears to be growing producer and consumer interest, including tourist interest, in sustainable wine [2]. As a result many wineries and wine regions are not only seeking to make their wine production more sustainable but are also looking to use sustainable practices as a point of brand and product differentiation in an otherwise congested and highly competitive market [3-5].

Although designed to promote a unified industry wide benchmark for vineyards, wineries and other wine businesses to strive to achieve their individual goals in terms of sustainable practices, the adoption of initiatives such as industry sustainability schemes are important as they can be used in the promotion of wine products as well as national and regional wine tourism and wine trails [6]. Because of its contribution to regional branding as well as significance for employment, winegrowing is often

seen as an extremely important contributor to rural regional development [7]. Such perceptions are only enhanced by the direct, i.e. visits to wineries, and indirect, i.e. purchase of local wine and food in restaurant, role of winegrowing to tourism in such regions. Yet the development of more sustainable winegrowing operations, including the role of wine tourism, is not only dependent on the size and economics of individual wineries, but also on the ability of wineries to deal with inherent risks borne from engagement with visitors to vineyards and wineries, such as biosecurity risks [8, 9]. As a number of vineyards and wine regions have experienced, the introduction and spread of viticultural diseases and harmful vectors such as phylloxera and Pierce's disease [8] could potentially eradicate the work done to encouraging the adoption of sustainable practices and the innovations that may arise as a result of sustainability initiatives.

Wine tourism is defined as "visitation to vineyards, wineries, wine festivals and wine shows for which grape wine tasting and/or experiencing the attributes of a grape wine region are the prime motivating factors for visitors" [10, p. 1], and is increasingly used by winegrowers as part of their business strategy. This strategy not only provides an umbrella for the various revenue streams that wineries engage in (such as cellar door sales, accommodation, events and wine and food festivals), but also encompasses a growing engagement with environmental issues such as biosecurity [8,9] and sustainability [6, 11-14]. Wine tourism has long been a source of added value for many vineyards and winegrowers [15, 16, 17, 18] with it also being regarded as a brand differentiator that enables wineries to meet consumers face-to-face and enabler of a long-term relationship with a product sampled at its place of origin [17, 19, 20].

It has been suggested that there are three major benefits which are derived from cellar door sales, that of "distribution at low marginal cost, the development of brand equity, and the chance to add value" [21, p. 7]. Small wineries tasting room facilities form an important part in the overall wine tourism marketing strategy by drawing consumers' attention towards the products available, which is then used to translate this attention into direct sales, making cellar door sales and/or winery visits potentially lucrative over the long term [22]. At the regional/destination level the high profile of some wines and wineries that attract tourists can provide other regional businesses opportunities through association with a quality product [7]. Wine tourism can help differentiate a region's position in the tourism marketplace if connected with local wines and can also be integrated with broader branding strategies [23, 24]. There is also some evidence that wine tourism can help extend the range of reasons for visiting a destination and extend length of stay and increase visitor expenditure on local product [7]. Therefore, rural regions in areas that are suitable for winegrowing are often seen to encourage the development of wine tourism and related activities such as food and cultural tourism [7, 25].

New Zealand government statistics suggest that on average 13% of all international holiday travelers visit a winery or participate in wine tourism activities annually in New Zealand, a figure of well over 200,000 a year [26]. The market is lucrative as international tourists participating in wine tourism spend NZ\$3,700 compared to the NZ\$2,800 average spend of all visitors. There is also a significant high value segment in the wine tourism market with over 22% of international wine tourists claiming to spend over NZ\$5,000 on their visit to New Zealand [26]. Significantly, 94% of international wine tourists are independent travelers thereby reinforcing the capacity of such visitors to travel to rural regions with their length of stay being significantly longer, with an average of 18.6 days, than the visitor average of 14.4 days [26]. Nevertheless, the bulk of winery visitors are domestic tourists, many of whom are day-trippers from urban centres, with the profile of the winery visitor varying according to the wine region as well as the winery as a result of locational and accessibility factors [27].

It is not without coincidence that the New Zealand wine industry has grown substantially since the 1980s along with international tourism [27]. Both industries have been central to New Zealand's brand positioning with respect to being 'natural' and their marketing efforts leverage off each other [28]. As of the end of 2016 the export value of New Zealand wine industry was more than NZ\$1.57 billion a year a figure more than double that of 2007, reflecting high export growth [28]. As a result, the industry supports more than 16,500 full-time jobs along with substantial seasonal employment. However, the industry is not without major challenges and is marked by substantial international competition and the vagaries of grape quality and tonnage being dependent on environmental factors

such as the weather. In addition, there has been no change to per capita domestic consumption meaning that the focus needs to be on exporting, hence wine tourism is valued as a means of generating market awareness and developing new customer relationships [28]. This means that the vast majority of wineries either have a cellar door where visitors can sample and purchase wines or can be otherwise visited by appointment [27]. As of 2016 New Zealand had 675 wineries, more than the 130 than 2007 but down from the high of 703 in 2012 [28]. The number of growers has declined from a high of 1,117 in 2009 to 747 in 2016, although the total area under grapes has grown from 31,964 ha to 36,192 ha over the same period. The average area of the 2,040 vineyards in the country was 17.4 ha with production being dominated by Sauvignon Blanc which accounts for around 60% of all area under wine grapes and 74% of all white wine production. Red wine is similarly dominated by a single variety, with Pinot Noir accounting for 70% of red wine production [28].

Naturalness and sustainability has become a driver of New Zealand's tourism and wine branding and is also inherent in national branding [29, 30]. New Zealand Winegrowers, the peak industry body, have placed a premium on the importance of sustainability with their 2016 *Annual Report* stating, "The sustainability story of New Zealand wine is being shared with wine influencers and consumers around the world" [28, p. 19]. However, despite the importance attached to sustainability at a national level there is relatively little known about sustainable behaviours and attitudes at the winery level. This is an important issue given that wineries have a significant role in both the wine and tourism industries [29]. Therefore, using a national survey of wineries this paper provides insights into winery understandings of sustainability and their behaviours. It is divided into four main sections. First, the remainder of the introduction will provide an overview of issues associated with winegrowing and sustainability. Second, an account of the survey instrument. Third, the results of the survey and, finally, the insights that can be drawn from the research and their implications for understanding sustainability in the wine tourism and winegrowing context.

1.1 Sustainability issues within the international wine industry

Although Ohmart [31] writes of a synchronicity that can be achieved when the goals of sustainable winemaking practices are in tandem with both the local community and the natural environment, the development of sustainable winegrowing presents a number of challenges to wine production and marketing practices (1, 32-42). Not only have there been changes made to production methods, but also the move towards sustainable practices within the wine industry has created several significant issues: first, the adoption, implementation and governance of these practices; second, how these sustainable practices are promoted in terms of brand positioning and competitive advantage; and, finally, whether sustainable winegrowing represents a pathway towards long term economic viability for wineries.

1.1.1 Sustainability from stakeholder perspectives

The recognition of the importance of sustainability issues occurs at multiple levels both internal and external to the winery concerned [32, 43]. Many stakeholders perceive sustainability as an important source of competitive advantage which can transfer into a positive, environmentally conscious image in the mind of the consumer resulting in increased sales and brand loyalty [44]. However, wine producers face an extremely competitive business environment given a decline in per capita wine consumption, the increased internationalisation of wine sales, and changes in consumer taste [1]. The knowledge which stakeholders possess regarding environmental issues is also an important factor associated with their involvement concerning environmental issues, and that this can be carried forward into the subsequent purchase behaviours and brand loyalty towards particular wineries [44].

The adoption of sustainable practices as a point of differentiation has been noted as a growing trend among wineries [2, 3, 14, 46-49). The way in which the end product reaches consumers has become important when considering environmental issues such as carbon emissions and food/wine miles undertaken in the journey from the vineyard to final consumption [44]. Attracting wine tourism (winery visitation) via the promotion of sustainable methods of onsite viticultural production is another path

which is being used pursue competitive advantage and build brand equity [44]. However, this approach, although undertaken in the interests of protecting the immediate environment, does not always marry with the political and ecological realities of sustainability at a global scale [30]. Therefore, to be truly sustainable, wine growing needs to understand its environmental, social and economic effects in supply chain and distribution channels [45]. As a result, Barber et al. [45], p. 167) suggests that “in order to increase purchase intention of an environmentally responsible product, such as visitation to ecological wine regions, consumer promotion should address both environmental and individual product consequences”.

Economies of scale are critical to the implementation of sustainable practices. In a study of sustainable viticulture practices in California it appeared that the larger wineries had the resources and financial means to pursue their locally based sustainability program with smaller vineyards that were less financially empowered having a slower rate of adoption [50]. Shaw et al. [51, p. 1091] put forward the idea that the three social processes of “innovation, cultural change and co-operation” are critical to the adoption of sustainable practices based on their research in the Lodi wine region of California. Carmichael and Senese [3] add to this idea in their study of two contrasting Canadian wine regions (the Niagara Peninsula of Ontario and the Okanagan Valley of British Columbia) suggesting the adoption of sustainable practices is also dictated by business development stage of a winery. This scenario suggests a delicate balancing act; a balance that creates synergy between the supply and demand forces at work in order to maintain both a competitive and viable market position whilst addressing political, economic and ecological concerns [3, 30, 50]. In contrast, a lack of institutional support has hampered the adoption of sustainable practices by some Australian wineries: “In times of increasing environmental challenges and international competition support from organisations that include government, local agencies and industry associations is often needed to assist small winery operations and the wine industry in general in their quest for long-term environmental sustainability, while maintaining product quality” (52, p. 168). Environmental protection and conservation practices are potentially an area of some contention within the industry and that achieving a balance between national and firm goals and initiatives and approaches can be difficult to maintain. For example, with respect to managing biological invasions and disease [53]. Attempts to prevent the transmission of vector-borne diseases which arguably present one of the highest level of threats to wine tourism have been hampered by governmental and global management failures [54]. This in itself suggests that greater collaboration between government agencies and research institutions could serve to provide a more co-ordinated approach [54].

1.1.2 Biosecurity

Key themes that have emerged in relation to winery biosecurity and invasive species concern the level of awareness among businesses of potential biosecurity risks, the strategies that are in place to deal with any such occurrences, and where wineries are able to turn in order to gain the information that they need to deal with and contain any problems that could potentially arise as a result of a breach of biosecurity protocols. Much of the concern of winegrowers with biosecurity is at a national border, rather than at the level of a vineyard. There appears to be only limited awareness of biosecurity risks at the level of the wine tourist who is coming into the country from a foreign destination, or even within countries [8,9], while an awareness of the same risks has been recognised as being important by stakeholders within the wine industry, for example in the Okanagan Valley of British Columbia [55]. While the wine tourism dimension is obviously very important, there are also biosecurity risks for winegrower’s vineyards even if they do not take visitors, therefore the costs of any strategy and how they may be implemented are an important consideration. In terms of risk mitigation, it has become of paramount importance to question whether vineyards have effective strategies in place to deal with potential biosecurity threats. Recognition of the importance of strict biosecurity protocols and the importance of a high degree of information sharing regarding potential biosecurity risks was noted in a study of wine tourism in Oliver, British Columbia, which found that because community stakeholders viewed wine tourism as an important source of economic prosperity, protection from biosecurity risks that could be introduced by visitor traffic was therefore paramount from stakeholder perspective [56].

However, biosecurity is arguably more of an emerging area in wine sustainability. Other environmental issues such as the use and quality of water, organic and inorganic solid wastes, greenhouse gas emissions, and energy use tend to be given a higher priority in sustainable winegrowing, while the use of chemical products, land use and broader ecosystem impact are other significant elements of concern [11, 34, 45, 57-59]. Each of these issues will now be examined in turn.

1.1.3 Water related issues

The use and quality of water is a significant factor in the wine production process [11]. Given the variability in geography, size, location and production techniques applied during this process, it is usually the responsibility of each producer to ensure the use of most effective and efficient sustainable methods available are applied in terms of water use [57, 60]. This situation represented a less than ideal scenario in a study of South African vineyard managers; with water usage by managers under-reported by 60% on average [61]. Australian vineyard managers have also been found to be under-reporting water usage to the point where 5% of cases studied were found to be using double the reported best practice level of 0.4 L per bottle [62]. The lack of any formal benchmark based on the amount of wine produced versus the number of litres water needed to meet what could be then labelled as a truly sustainable wine production process is a key issue in sustainable vineyard water usage [35, 57, 62-64]. The variety of geographical terrains that wine regions encompass dictates that the methods used, and the resultant efficiency of these methods, cannot be used as a basis for industry level benchmarks in terms of sustainable production [35, 57, 63, 64]. In addition, the disposal of wastewater from winemaking and cellaring is one of the most pertinent environmental issues facing wineries who are attempting to adopt sustainable practices [58].

1.1.4 Solid waste

Solid waste generation is a major issue facing sustainable wine production [45, 52, 65-67]. Waste minimisation strategies have been a major focus of winegrowers attempts to improve their environmental performance; However, the rudimentary way in which waste minimisation strategies have been implemented by many wineries has resulted ineffective process for dealing with solid waste [68]. Organic waste in the wine production process includes by-products such as grape marc, lees, pomace, stalk and dewatered sludge [57]. These all require specific disposal treatments due to odour issues [69]. Seasonal production variations also present a challenge to the management of wastewater quality with the harvest period of production producing increased levels of effluent [69, 70]. This challenge is often complicated by a lack of winegrower knowledge regarding organic waste production [57, 68, 70, 71]. Methods utilised by wine producers for inorganic waste disposal have been deemed to be even less effective than those used for organic waste [57]. Inorganic waste materials comprise “numerous kinds of waste plastic, especially pesticide containers, irrigation lines, old netting, vine guards, packaging waste and polythene” [11, p. 994]. The two most common types of disposal are incineration or depositing materials in landfill [11, 58, 72] while recycling programmes have reportedly only met with a limited degree of success [66]. The economic benefits of these methods of disposal have proven to be a contentious topic [57, 59, 72, 73] and it has been argued that stricter industry governance is required in order to ensure all wineries follow appropriate waste disposal practices [71].

1.1.5 Greenhouse gas emissions and energy use

Studies which have examined the logistics involved in both wine production and distribution have pointed out the intensive carbon footprint that both of these areas leave in terms of energy use [74-80]. This presents issues not only for winegrowers, but also for the entire supply chain. Over half of the carbon emissions involved in wine production occur in the post-production phase [81], presenting substantial challenges in meeting the demands of the end consumer with regards to sustainability [82].

One industry response to the challenges posed by greenhouse gas emissions was the development in 2007 of a joint initiative known as the Wine Industry Greenhouse Gas Accounting Calculator [83]. This initiative was put together by industry associations from around the world in order to forge “a

greater understanding of the carbon intensity of their own operations” [57, p. 5]. This need for a higher level of understanding is critical as increased temperatures as a result of climate change has been shown to have the capacity to damage vines in a number of wine regions [57, 80, 84].

1.1.6 Climate change

The recognition of an ‘intrinsic link’ between the climate in which wine grapes are grown and the quality of the wine which is produced [80], underscores the fragile nature of the wine industry in the face of the impact of global climate change. Winegrowing, like tourism, is an industry especially vulnerable to the effects of climate change and “the wine industry is expected to be especially vulnerable to these impacts” [57, p. 5]. The potential impacts of climate change on winegrowing have resulted in a range of work that examines both the effects of climate change as well as the business response [80, 84-91].

Traditionally, the warmest years have tended to produce the best wines in many regions [92]. However, this idealistic scenario is actually under threat and may actually disappear altogether as “projected increases in average temperature and climate variability over the coming decades may threaten some regions’ competitive advantage” [64, p. 60]. For example, regional warming in Northern California coupled with stress from frost, pests and disease had led to the need to introduce adaptive measures such as ensuring that exposed fruit was provided with shade, delays in the start of pruning regimes and the use of spray to protect grapes from UV rays [93].

When considered in the context of warnings of increases in the length of seasonal growth times, coupled with the advent of a greater number of extreme weather events, it would appear that the consequences of climate change could have repercussions throughout the global wine industry for many decades to come. “Because grape cultivars differ in their suitability for and adaptability to different climates, shifts in the cultivar profile of different regions, and possibly the emergence of hitherto unsuitable lesser-known or even novel cultivars, can be expected over the coming decades. A shift of grape production to cooler regions of the world i.e. towards higher latitudes and altitudes is [a] likely scenario of global warming” [64, p. 64].

Nevertheless, the impacts of climate change are highly variable both geographically and in terms of its effects on grape varieties [84, 85, 91]. Temperature changes in southern European regions have resulted in some areas becoming too hot to produce wines deemed to be of high quality, which have seen winegrowers move their operations to northern regions as a result [84]. Similarly, research conducted in the Napa Valley region of California [94] indicated that the quality of grapes harvested was influenced by fewer frosts in the winter and the early onset of spring. The optimal conditions required for growing particular varieties are constrained to geographical locations. Climate change therefore creates a situation that puts “the grapevines at a greater potential risk from climatic variations and change than crops with a broader geographic range” [84, p. 322]. One means of mitigating the economic risks of less than optimal growing conditions in the Niagara region of Canada has been to use weather contracts [95].

Strategies designed to address problems caused by climate change are regarded as critical within sustainable winegrowing in order to protect “the vitality of the industry” [93, p. 484] as well as respond to wider pressures [84, 93, 96, 97]. However, the capacity for a winegrowing or tourism system to be able to adapt to change is subject to the ability of actors to work collaboratively, as well as structural changes at the social and institutional level (98, 99).

1.1.7 Chemical use

The use of chemical products in wine production has potentially become more prevalent as wineries attempt to pursue competitive advantage [69]. Chemical use is not solely related to just agricultural processes, but also occurs during the cleaning and maintenance processes involving the equipment used in wine production [11]. Issues have arisen in terms of the use of chemically treated timber in vineyards, while the use of herbicides, pesticides and synthetic fertilisers have also provided

cause for concern [34, 43]. This is due to the fact that not only do these products present the risk of contamination to soil, but they can also potentially jeopardise water sources as well [11, 65].

The “inappropriate use of chemical products can devastate the vineyards’ natural defence network by damaging populations of natural predators that would usually keep the original pest at bay” [57, p. 5] The lack of natural predators that this causes can lead to the application of stronger chemicals in order to boost vineyard defences which can then potentially create even more environmental problems. The economic implications of increased chemical use have also resulted in a significant effect on the overall cost per tonne of grapes utilised in production [34, 52]. Convincing wine producers to adopt natural approaches towards pest resistance has proven to be difficult given that synthetic alternatives are more economical and less labour intensive in their application [11, 57]. The benefits derived from using natural approaches often only became apparent after the fact [52]; “A significant challenge for future research will be quantifiably finding ways to articulate the economic and environmental benefit associated with natural approaches to viticulture and wine-related land management” [57, p.6]. Indeed, biodiversity-oriented approaches to vineyard management practices are relatively uncommon [34], sometimes resulting in unintended effects on local ecologies [84, 100].

1.1.8 Land Use

Issues in terms of land management have come to the fore in recent years due to the rapid expansion of winegrowing regions, a fact which holds particularly true for wine regions in New Zealand, Australia and Canada [43, 59, 65]. The main problems concern the contamination, pollution, and perceived changes to existing environments [43, 45, 59, 67]. “It is important wine organisations be able to tangibly demonstrate their commitment to environmental sustainability and preserving the local landscape” [57, p. 6], as these problems also have the potential to damage relations with local communities. This underlines the importance of not just considering sustainable land usage solely from the point of view of the individual wine producers, but also taken into account community interests as well [22, 43, 74].

1.1.9 Consumer Responses to Sustainable Winegrowing

Persuading growers to switch to sustainable winegrowing methods can require an assurance that there is something tangible to be gained in terms of the quality of wine, viability of the growing regime, and/or economic return. If this idea of tangibility is considered within the context of consumer perception towards sustainable wine production there is relatively little literature to provide wine producers with evidence of the economic value of sustainable practices with respect to increased returns. A study of how sustainable production methods could be used by Californian wineries to differentiate their products found that “customers like the concept of sustainable winemaking...but they really do not have a clear idea what sustainability means in practice or what process the wineries do to achieve it” [50, p. 193]. A New Zealand based study [34] also reported that while consumers supported the concept of sustainable winemaking, they had little knowledge of what exactly was involved in the production processes involved that gave the particular wine brands environmentally based favourability.

Some authors have argued that strong environmental stewardship is necessary on the part of producers if the concept of sustainable wine production is going to be accepted and acted upon by wine consumers in their purchasing [Berghoef & Dodds 2013]. Forbes et al. [34, p. 15] argue that “competitive advantage can only be gained in the marketplace if companies tell their consumers’ about their environmental focus” and that greater emphasis should be placed on the labelling of wine products to reinforce the fact that sustainable wine production methods have been used to create the end product. Nevertheless, the communication of positive environmental attributes of sustainable wine products is an area where there appears to be a disconnect between the desire of firms to be seen to be taking a proactive approach towards sustainability and the need for the end consumer to be able to access the appropriate information regarding what defines quality eco-certification at the point of purchase [34, 101].

The question of whether eco-labelled wine can achieve higher price premiums in the marketplace has been a subject of some contention [34, 45, 50, 74, 101]. A study of American wine consumers found that there existed a willingness to pay more for environmentally friendly wine packaging, and declared that this is a sign from wine purchasers that “our ecological problems are serious and that behaving in an ecologically favourable manner is important and not inconvenient” [74, p. 439]. However, when looking at this question from a supply side perspective a New Zealand wineries study [11] found that neither sustainable nor organic wines were able to obtain a price premium. The desire for a quality product coupled with the personal values of those directly involved in producing the wine were revealed to be the primary influences on improved environmental performance [11]. Consideration of these issues led to Jones [102, p. 52] to comment: “While sound sustainability developments have occurred within the wine industry, it is becoming more and more critical to begin orienting the industry’s innovation, communication and experiences toward consumer definitions, not solely industry definitions, of sustainability to ensure these efforts are relevant and promote economic vitality”. This statement underlines an important area of concern for researchers on winegrower sustainability when contemplating whether or not firms actually value certification and view sustainability programmes aimed at achieving this as important or not. Clearly, if firms adopt a cursory approach to sustainability then the implementation of branding and labelling initiatives will suffer as a result, with potential flow-on effects for brand and product perception.

1.2 Sustainable Winegrowing Initiatives in New Zealand

The evolution of industry focused initiatives to promote sustainable winegrowing within the New Zealand wine industry on a systemic basis began in 1995 with the development of the Sustainable Winegrowing New Zealand (SWNZ) organisation [103] as an initiative of the industry peak body. The SWNZ scheme was first introduced commercially in 1997 with the expectation that it would be adopted by winegrowers from all grape growing regions and, coupled with the introduction of winery standards in 2002 [103], aimed to underline an industry-wide commitment to sustainable production practices and techniques. The goal of this initiative was to have full participation in the scheme by all New Zealand winegrowers by 2012, and steps to ensure this have been taken by making SWNZ membership mandatory for all wineries if they wish to take part in trade shows and export their products under the Wine New Zealand banner [103] (the brand of the New Zealand Winegrowers). Enforcement is also undertaken through external auditing of sustainable practices by SWNZ appointed agents [103].

The manifesto of SWNZ aims to provide a best practice model which wineries can utilise to benchmark their environmental practices [103]. These aims seek to provide a greater degree of quality during all stages of production and whilst also recognising that sustainability is also an important issue to the end consumer in whether they choose to buy wine produced in New Zealand [103]. This manifesto also encompasses five core strategies which are designed to provide benefits to all member of the scheme. These strategies are as follows [103]:

1. A framework of efficient and economical viticultural and winemaking practices that encourage environmental stewardship.
2. A continuous improvement pathway, enabling organizations to constantly improve and fine tune their methods.
3. A knowledge transfer platform for keeping up-to-date with new technology, approaches, and application techniques.
4. An external audit structure based on adherence to recommendations and guidelines issued by the OIV (International Organization of Vine and Wine), with integrity and rigour to exceed market expectations.
5. The opportunity to play a part in preserving New Zealand’s unique environment while operating under an independently audited and well-respected sustainability framework.

As membership of the SWNZ scheme is meant to be mandatory for all New Zealand wineries [104], then applying such a framework in a standardised fashion to the New Zealand wine industry creates the potential for division should wineries reject the aims of the scheme. When consideration is given to the fact that the number of vineyards exceeds the number of grape growers, it is pertinent to note that

by the year ending October 2015 only 254 wineries, representing 37.7% per cent of New Zealand wineries at the time (Table 1), had actually become members of the sustainable wine growing scheme. Commitment to carbon-neutral wine exports remained the focus of only a few, high profile wineries [104], so based on this evidence alone it would appear that there are some significant issues at play with adoption of sustainability practices. Issues surrounding the adoption of sustainable winegrowing are not only limited to physical wine production elements; but can also affect the brand positioning of wine products and important avenues of offshore promotion such as wine tourism.

Table 1. Membership of SWNZ

	2004	2005	2006	2007	2008	2009	2010	2015
Vineyards	403	431	432	457	683	1244	n/a	1918
Number of wineries	463	516	530	543	585	643	672	673
SWNZ Wineries	30	51	53	59	77	135	190	254
% membership	6.5%	9.9%	10%	10.9%	13.2%	21%	28%	37.7%

Source: Derived from 104.

2. Materials and Methods

This study is based on the results of the 2015 New Zealand National Wineries' Survey which was designed to facilitate the collection of information about wine tourism in New Zealand from the wineries' perspective. The sample population was derived from all New Zealand wineries registered in the 2015 *Australian and New Zealand Wine Industry Directory* [105] and it was the fourth such survey of its type to be undertaken as part of a longitudinal study.

Based on the template provided by the three previous New Zealand National Wineries' Surveys [13, 27, 106] survey questions were developed in light of relevant domestic and international literature and fieldwork. The 2015 New Zealand National Wineries' Survey was divided into seven main sections. The first two sections focused on the winery and visitor profiles. This was then followed by sections dedicated to biosecurity and sustainability, before innovation in the New Zealand wine tourism industry was examined. The final section which focused on tourism and marketing then led into a set of questions that were designed to gather respondent contact information. The generic questions in the 2015 survey with respect to winery profile and tourism were similar to those asked in the 1997, 2003 and 2010 surveys with some modifications designed to gather updated information regarding sustainability and biosecurity.

The 2015 survey utilised primary data obtained from participants who represent each of the 558 vineyards located within New Zealand from listings published in the 2015 *Australian and New Zealand Wine Industry Directory* [105] who received the survey via post. A link was also provided for those wineries who preferred to complete the survey online. 145 wineries responded (25.9%) in total. Of these 145 wineries, 80 responded that they had gone out of business, but these were still judged as valid responses, and these surveys were still included in the overall response rate. The remaining 65 wineries who responded then provided the data that this study was based upon. Prior response rates to the 1997 survey obtained 111 responses out of 270 producers, giving a response rate of 41.1% [106], whilst the second survey conducted in 2003 achieved a response rate of 121 usable responses out of the 419 wineries surveyed, a response rate of 28.9% (107). The 2010 survey obtained 125 responses out of 511 producers (response rate of 24.5%). Rates of response to this longitudinal survey compare favorably to other business surveys conducted within the New Zealand wine industry such as a New Zealand

Winegrowers endorsed survey by Deloitte which had a response rate of just 6% from New Zealand wineries [108].

The determination of New Zealand wine producers' positions towards sustainable practices was the area in which the majority of new questions in the 2015 iteration of the survey occurred. These questions explored areas such as participants' commitment towards sustainable practices, whether such practices were viewed as being valuable as a potential source of competitive advantage, and the reasons behind why sustainable practices were initially employed by wineries if they had chosen to adopt them. Questions posed in the biosecurity component of the 2015 New Zealand Wineries Survey were based on previous New Zealand studies of wine tourists and wineries [8,9, 27]. As a result of the longitudinal nature of some of the survey questions, some responses are presented in comparison with previous iterations of the survey. Percentage summaries of responses to questions are provided. In order to illustrate which factors are significant within the New Zealand wine industry Levene's tests were also conducted where appropriate.

3. Results

3.1. Cellar door sales

In 2015 81.5% of respondent wineries offered cellar door sales to the public, which was an increase from 2010 and a result similar to the 1997 figure (Table 2). The fluctuations in the availability of cellar door sales is potentially a reflection of the business turnover in smaller winegrowers and issues faced by winegrowers with respect to business strategies and engagement in tourism as a revenue stream. Perhaps not surprisingly, 75.9% of respondents in 2015 believed that cellar door sales were significant for their business, a figure similar to the 1997 result. Whereas only 65.9% agreed in 2003 and 57.2% in 2010. Significantly respondents without cellar doors available to the public could potentially be visited by appointment. In order to ascertain whether there were particular characteristics which differentiated those wineries which offered cellar door sales versus those that did not, an analysis was conducted in terms of region, winery size, whether wine was made on site, ownership status and annual turnover. However, none of these factors were statistically significant.

Table 2. Proportion of respondent wineries which offer cellar door sales

	# 1997	% 1997	# 2003	% 2003	# 2010	% 2010	#2015	% 2015
Offer	92	83%	80	66.4%	70	68%	53	81.5%
Do not offer	19	17%	41	33.6%	33	32%	12	18.5%
Total	111	100%	121	100%	103	100%	65	100%

3.2. The Importance of Sustainability to Wineries

Over half of the respondents in the 2015 survey strongly disagreed (50.8%) or disagreed (30.8%) that sustainability practices are important for the New Zealand wine industry (Figure 1). based on the 2010 figures where the majority of respondents either agreed (33%) or strongly agreed (21.4%) the 2015 figures indicate a strong reversal in the viewpoint taken by the New Zealand wine industry towards the value of sustainable practices for the local industry in 2010. However, further questioning revealed a significant split among respondents with respect to the value of sustainable practices. In 2010 over half of respondents did not believe that sustainability practices provided wineries with a source of competitive advantage. The position had changed in 2015 with 30.8% of wineries agreeing that sustainability provides an important source of competitive advantage, however 24.6% still disagreed, while 20% of wineries remained unsure (Figure 2). This shows that opinions amongst New Zealand wine producers are very much divided over the true value of sustainability, despite the emphasis that it is given in international marketing and promotion.

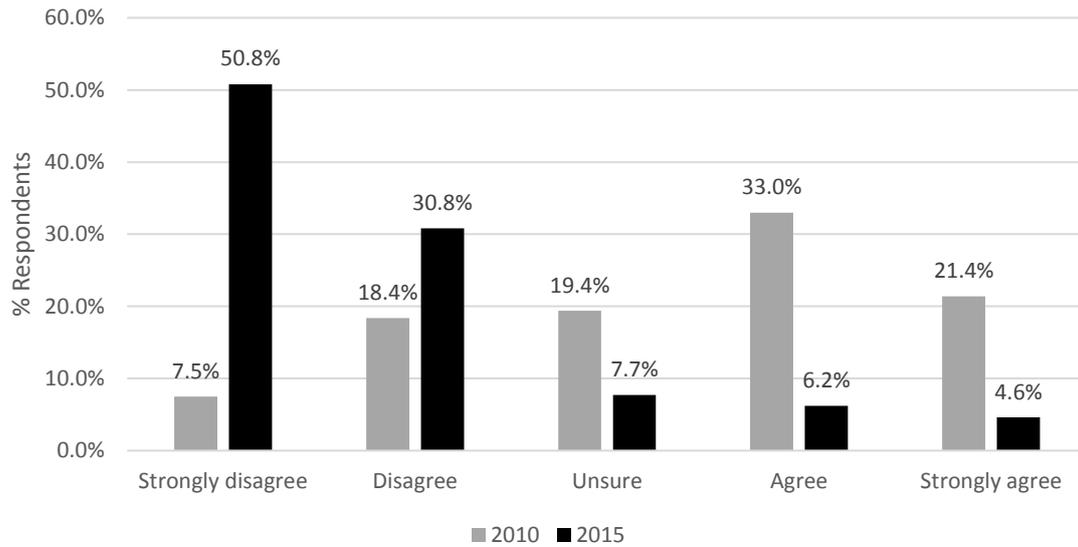


Figure 1. Importance of sustainability practices for the New Zealand wine industry

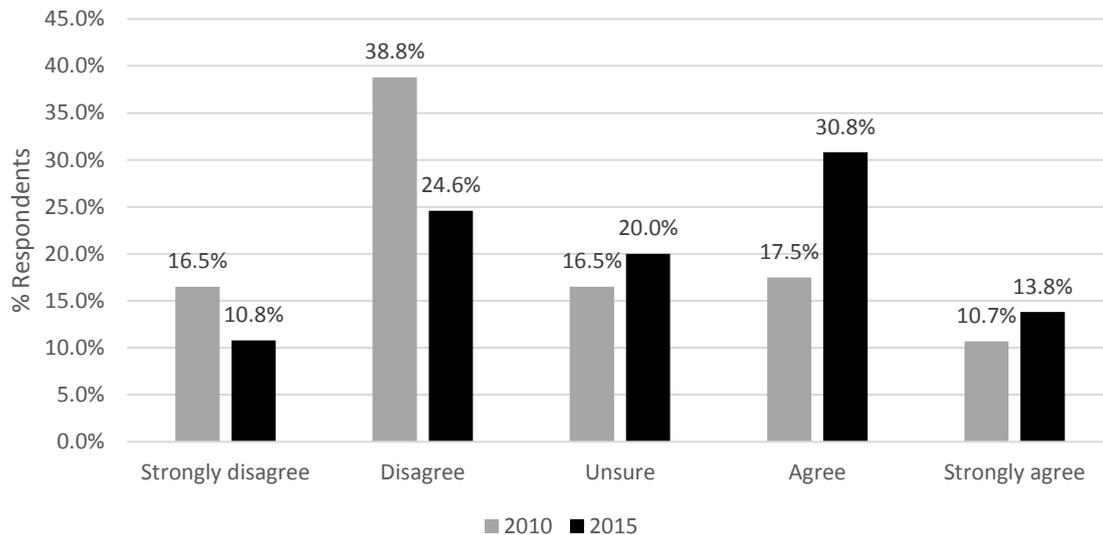


Figure 2. Importance of sustainability practices as a source of competitive advantage

78.5% of wineries surveyed in 2015 stated that they were accredited members of the SWNZ; this is an increase on the figure of 56.3% of wineries who stated that they were accredited members in 2010. These figures indicate the seeming disparity between the vision of SWNZ of 100 per cent industry uptake of the program (a goal that they originally had hoped to achieve by 2012). The reality is that some wineries either do not see any true value being gained through accreditation, or they mistrust the ability of SWNZ to be able to follow through on delivering the strategic intent on which this scheme is based. Nevertheless, when asked about the level of commitment that their winery had toward sustainability 93.8% of respondents stated that they had already adopted sustainable practices, while 3.1% stated that they were planning to adopt sustainable practices but were not ready yet. The remaining respondents reported that they were not interested in adopting sustainable practices.

3.1.1. Impact of sustainability issues on wineries

In order to examine the impact that sustainability issues have had on New Zealand wineries a series of statements which focused on how they defined the elements of sustainability. This was assessed via a five-point Likert scale (1=No impact, 5=Major impact). The first set of topics covered

included climate change, corporate social responsibility, business viability and whether the felt that sustainability incorporated the three elements of climate change, environmental, social and economic issues. The second set of topics examined whether wineries felt that sustainability meant meeting the needs of the current generation without compromise, or referred to biodiversity, social justice or other wider environmental issues. A final question asked whether wineries felt that sustainability referred to addressing issues from a long-term perspective (Table 3).

New Zealand wineries were divided over their perception of the impact of climate change issues on their organization defined sustainability. 44.6% of wineries stated that climate change had little impact while 24.6% responded that they believed that climate change had no impact at all. In contrast corporate social responsibility and business vitality were seen as more important elements of sustainability, although wineries were split as to perceptions of the impact of social justice considerations, with 35.4% of wineries stated that social justice issues had no impact at all, while 27.7% declared that the same topic had a lot of impact on their winery. Significantly, New Zealand wineries felt that the combination of climate change, environmental, social and economic issues was important to them, with 60% stating that this had a major impact on their business. Similarly, 49.2% of New Zealand wineries viewed other environmental issues outside of those related to climate change as having a major impact on their organizational definition of sustainability. 50.8% of wineries felt that not compromising on sustainable practices to meet the needs of the current generation had a major impact on how they ran their business. Perhaps unsurprisingly, the same proportion of respondents regarded sustainability as something that addressed issues from a long-term perspective.

Table 4 shows how New Zealand wineries define sustainability based around the same issues covered in Table 3. The key difference here is that Table 4 views these issues from the perspective of whether survey respondents are accredited SWNZ members or not. The results show significant at the .05 level for corporate responsibility issues ($t = 1.508$, $sig. = .031$) and the holistic focus of climate change, environmental, social and economic issues ($t = 1.120$, $sig. = .006$). Solely focusing on environmental issues ($t = 1.607$, $sig. = .008$) was also significant at the .05 level.

Table 3. How New Zealand wineries define sustainability

How organisation defines sustainability	No impact	Little impact	Some impact	A lot of impact	Major impact	Mean
Refers to climate change	24.6%	44.6%	18.5%	9.2%	27.7%	2.95
Refers to corporate social responsibility issues	23.1%	10.8%	6.2%	29.2%	30.8%	3.34
Refers to maintaining the viability of the business	21.5%	7.7%	15.4%	16.9%	38.5%	3.43
Incorporates climate change, environmental, social and economic issues	7.7%	3.1%	10.8%	18.5%	40.0%	4.20
Refers to meeting the needs of the current generation without compromise	15.4%	4.6%	12.3%	16.9%	50.8%	3.83
Refers to biodiversity issues	13.8%	10.8%	13.8%	29.2%	32.3%	3.55
Refers to social justice issues	35.4%	12.3%	13.8%	27.7%	10.8%	2.66
Refers to environmental issues	16.9%	0.0%	4.6%	29.2%	49.2%	3.94
Refers to addressing issues from a long-term perspective	20.0%	7.7%	9.2%	12.3%	50.8%	3.66

Table 4. How New Zealand wineries define sustainability based on SWNZ accreditation

How organisation defines sustainability	t	Sig.
Refers to climate change	.843	.157
Refers to corporate social responsibility issues	1.508	.031
Refers to maintaining the viability of the business	1.351	.416
Incorporates climate change, environmental, social and economic issues	1.120	.006
Refers to meeting the needs of the current generation without compromise	1.147	.130
Refers to biodiversity issues	1.022	.412
Refers to social justice issues	.872	.689
Refers to environmental issues	1.607	.008
Refers to addressing issues from a long-term perspective	.233	.530

Significance is measured at the .05 level.

Survey participants were asked to respond to a series of statements based on the level of perceived importance that sustainability practices had for particular aspects of their business at their winery. Statements were asked utilizing a five-point Likert scale (1=Not at all important, 5= Extremely important) (Table 5). Areas in which sustainability was regarded as being the most important were stronger brand, operational efficiency, employee recruitment and enhanced ability to enter new markets. Dimensions of the business for which sustainability was regarded as relatively unimportant were migrant worker rights, lowering financial and operating risk and accessing more potential sources of revenue. Very interestingly, given the supposed significance of sustainability as a factor in tourism, almost a third of respondents regarded sustainability practices as being unimportant in attracting visitors to their winery.

Table 5. Importance of sustainability for different aspects of business

Aspect	Not important	Somewhat important	Important	Very important	Extremely important	Mean
Stronger brand/greater pricing power	29.2%	23.1%	16.9%	13.8%	16.9%	2.66
Employee recruitment, morale and retention	27.7%	13.8%	24.6%	18.5%	15.4%	2.80
Greater operational efficiency	23.1%	16.9%	23.1%	24.6%	12.3%	2.86
Improved customer loyalty	27.7%	12.3%	30.8%	16.9%	12.3%	2.74
Enhanced ability to enter new markets	29.2%	7.7%	30.8%	20.0%	12.3%	2.78
Migrant workers' rights	47.7%	13.8%	26.2%	4.6%	7.7%	2.11
More potential sources of revenue	35.4%	21.5%	27.7%	3.1%	12.3%	2.35
Lower financial and operating risk	43.1%	15.4%	21.5%	9.2%	10.8%	2.29
Ability to justify price premium for products	23.1%	18.5%	36.9%	7.7%	13.8%	2.71

Attracting visitors to winery	30.8%	16.9%	36.9%	7.7%	7.7%	2.44
Lower legal and regulatory risk	27.7%	20.0%	23.1%	18.5%	10.8%	2.65

Respondents were also asked to state whether there were potential benefits for employing specific sustainable practices at their winery (utilizing a five-point Likert scale 1=Not at all important, 5= Extremely important) (Table 6). A number of these practices, such as reduction in the amount of sprays and chemicals used and improved waste management processes are integral to the SWNZ program. Therefore, it is perhaps unsurprising that reducing the toxicity of harmful chemicals, and reductions in waste production and energy consumption were regarded as being the most beneficial areas in the adoption of sustainable practices, with the reduction of greenhouse gas emissions also being seen as a beneficiary of such measures. However other, more intangible areas, such as the building of consumer awareness, relationships with suppliers and distributors and the significance of ecolabelling were not regarded as benefiting as greatly, even though there was a reasonable level of support for their relevance in developing new business opportunities. Table 7 examines the importance of each of the issues examined in Tables 5 and 6 and illustrates that no issues were found to be significant at the .05 level.

Table 6. Potential benefits of sustainability practices for New Zealand wineries

Statement	Not important	Somewhat important	Important	Very important	Extremely important	Mean
Builds consumer awareness of winery	29.2%	26.2%	13.8%	16.9%	13.8%	2.60
Eco label importance for company/product branding	29.2%	24.6%	24.6%	7.7%	13.8%	2.52
Reduction or elimination of greenhouse gas emissions	20.0%	15.4%	21.5%	27.7%	15.4%	3.03
Wineries' supplier and distributor relationships	29.2%	21.5%	12.3%	18.5%	18.5%	2.75
Development of new business opportunities	24.6%	20.0%	15.4%	18.5%	21.5%	2.92
Reduction of energy consumption	15.4%	16.9%	23.1%	21.5%	23.1%	3.20
Helps to reduce waste	15.4%	7.7%	16.9%	40.0%	20.0%	3.41
Helps to reduce toxicity of harmful chemicals	10.8%	4.6%	10.8%	26.2%	47.7%	3.95

Table 7. Importance of sustainability for different aspects of business based on SWNZ accreditation

Aspect	t	Sig.
Stronger brand/greater pricing power	.464	.590

Employee recruitment, morale and retention	.042	.879
Greater operational efficiency	-.207	.665
Improved customer loyalty	-.366	.351
Enhanced ability to enter new markets	.429	.551
Migrant workers' rights	.119	.342
More potential sources of revenue	.441	.131
Lower financial and operating risk	.236	.646
Ability to justify price premium for products	.861	.674
Attracting visitors to winery	.305	.835
Lower legal and regulatory risk	1.359	.126
Builds consumer awareness of winery	1.588	.138
Eco label importance for company/product branding	1.647	.486
Reduction or elimination of greenhouse gas emissions	1.429	.779
Wineries' supplier and distributor relationships	1.524	.831
Development of new business opportunities	2.040	.415
Reduction of energy consumption	1.272	.667
Helps to reduce waste	1.336	.227
Helps to reduce toxicity of harmful chemicals	.080	.264

Significance is measured at the .05 level.

3.2 *Why do wineries chose to employ sustainable practices?*

Given that respondents are clearly ambivalent about many aspects of the value of sustainable winegrowing practices a clear issue is therefore why adopt them. An overwhelming majority of respondents (89.2%) stated in the 2015 survey that they did not choose to employ sustainability practices to increase revenue, while 70.8% responded that they did not choose to employ practices to reduce costs (Table 8). This was a trend consistent with the 2010 survey. The key focus was on the reduction of environmental impacts which had increased from 60.2% of respondents in 2010 to 69.2% in 2015. The reduction of energy consumption was a significant though lesser concern. Other reasons that were given by respondents for the adoption of sustainable practices included that it was the 'right thing to do', because it was enforced by New Zealand Winegrowers, so that wineries could legally export, to comply with SWNZ requirements, and also that it was mandatory to be a member of SWNZ if wineries wanted to enter wine shows. However, some respondents stated that they felt that SWNZ membership had no real benefit to them; with one noting that they had become BioGro Certified (a New Zealand organic growing accreditation scheme) in order to avoid what they termed as a 'sustainability whitewash.' Another respondent stated: "My winery has been a member of SWNZ for over 15 years. In that time not one person in the wine trade or anyone who has visited my winery has ever asked about my SWNZ certification. I've reached the conclusion that it has zero value for my winery in terms of a branding tool and attracting visitors." Other responses were also highly critical of the SWNZ program. One respondent commented that "For smaller wineries the cost involved coupled with the additional paperwork is just too much to even consider joining the SWNZ program. We believe that we already

practice sustainable methods – we don't need someone to dictate what these are to us". Of interest as well was the statement by one participant: "The compulsory nature of the SWNZ program is nothing but a disguised tax for wineries. We have to pay it, but the benefits received are negligible, and don't appear to be getting any better. For smaller wineries it is almost impossible to take part due to the costs involved." The vehemence of many such responses underlines that within the New Zealand wine industry the adoption of sustainable winegrowing practices is not going as smoothly as portrayed in international marketing and promotional efforts.

Table 8. Reasons for winery choosing to employ sustainability practices

Reason	2010		2015	
	Yes	No	Yes	No
To increase revenue	11.7%	88.3%	10.8%	89.2%
To reduce costs	29.1%	70.9%	29.2%	70.8%
To increase market share	16.5%	83.5%	15.4%	84.6%
To reduce energy consumption	32%	68%	33.8%	66.2%
To reduce environmental impact	60.2%	39.8%	69.2%	30.8%
To establish/ or exploit new market opportunities	19.4%	80.6%	13.8%	86.2%
To improve productivity	21.4%	78.6%	13.8%	86.2%
To attract visitors to my winery	12.6%	87.4%	15.4%	84.6%
Other	29.1%	70.9%	26.2%	73.8%

Table 9 compares the significance of 2010 and 2015 reasons for employing sustainable practices amongst New Zealand wineries based on SWNZ accreditation. Of interest here is the fact that in 2010 increasing revenue ($t = -1.452$, sig. = .004), increasing market share ($t = -1.338$, sig. = .008) and reducing energy consumption ($t = -3.420$, sig. = .000) were all significant at the .05 level. Establishing and/ or exploiting new market opportunities ($t = -1.970$, sig. = .000) and using sustainable practices to attract winery visitors ($t = -1.690$, sig. = .001) were also found to be significant in 2010 as well. Examination of these same issues in the 2015 survey showed that only attracting winery visitors ($t = -1.174$, sig. = .037) remained as the sole reason that was significant at the .05 level. This indicates that in the five years between these two surveys that New Zealand wineries appear to have become more cynical towards the benefits derived from sustainable practices, yet still see sustainable practices as having some form of value in attracting wine tourists.

Table 9. Reasons for winery choosing to employ sustainability practices based on SWNZ accreditation

Reason	2010		2015	
	t	Sig.	t	Sig.
To increase revenue	-1.452	.004	-.487	.314
To reduce costs	.387	.446	-.060	.903
To increase market share	-1.338	.008	-.127	.799
To reduce energy consumption	-3.420	.000	.164	.754
To reduce environmental impact	-1.651	.017	.198	.681
To establish/ or exploit new market opportunities	-1.970	.000	-.811	.082
To improve productivity	.186	.711	.053	.916
To attract visitors to my winery	-1.690	.001	-1.174	.037
Other	-2.334	.000	-.163	.740

Significance is measured at the .05 level.

3.3. Biosecurity and Wine Tourism

When asked whether their vineyard had biosecurity measures in place for wine tourists in 2015 (Table 10), 30.8% of participants believed that the current measures that they employed were adequate, which is an 8.5% increase from the 2010 figure and an advance on the 2003 survey, which showed that only 11.9% of wineries had biosecurity measures in place. These figures highlight that there is a significant gap in the actions taken by wineries and the potential biosecurity threats they face from winery visitation [8 ; Renton et al. 2009). Nearly half of the New Zealand wineries surveyed report that visitors are able to wander freely among their vines. This attitude towards risk mitigation suggests that a more cautious approach underpinned by a higher level of awareness with regard to the consequences that a disease outbreak could have for the New Zealand wine industry is required. In 2015 just under half of the wineries survey (43.1%) indicated that they were unsure of whether the current level of information available regarding biosecurity threats that they received was adequate, a figure similar to that of the previous survey (Figure 3). Nevertheless, 55.4% of wineries surveyed in 2015 believed that there was no need for a biosecurity component within the SWNZ scheme, which could be a potential avenue to better communicate biosecurity management to winegrowers. Without protection from disease or invasive species any long-term strategies that wineries have in place with regard to sustainability initiatives will be threatened [56].

Table 10. Biosecurity measures and visitor access

Statement	2003		2010		2015	
	Yes	No	Yes	No	Yes	No
Vineyard has biosecurity measures in place for tourists	11.9%	89.1%	22.3%	77.7%	30.8%	69.2%
Visitors can wander freely amongst vines at winery	N/A	N/A	31.1%	68.9%	44.6%	55.4%

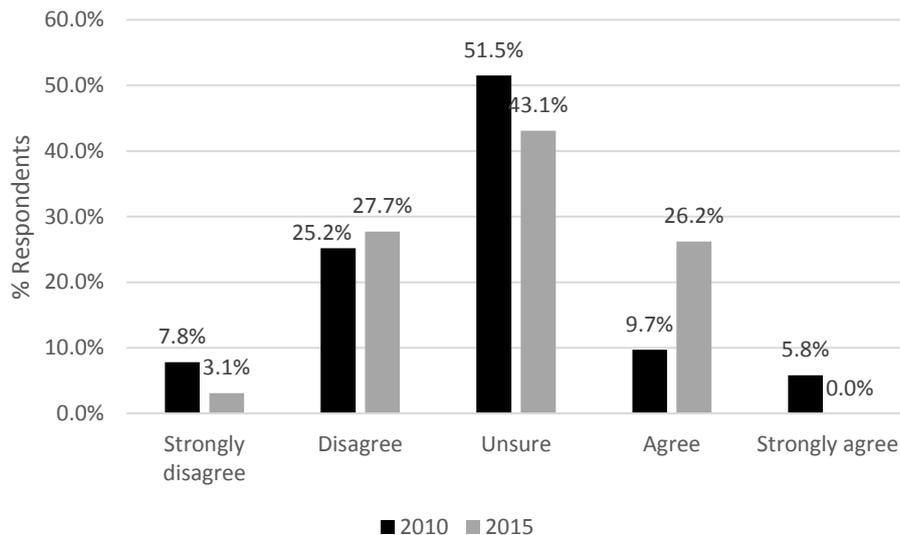


Figure 3. Winery receives adequate biosecurity information from government agencies

4. Discussion

The New Zealand wine industry is of considerable importance to regional economies as a result of its contribution to wine production and wine tourism [7, 27]. Sustainability and the qualities of a natural environment are an important part of the brand positioning for New Zealand wine and tourism [11, 29]. However, the results of the research discussed in this paper indicates that there are substantial gaps with respect to the brand attributes that are communicated and what is actually implemented at the firm level. Furthermore, although wine tourism is an important component of winegrower's business strategies, providing opportunities for both short-term (cellar door) and long-term (retail) sales [1], there is a disconnect between winery sustainability practices and the involvement of winegrowers in tourism. Such a result reinforces previous research that found that the innovative practices of New Zealand winegrowers that are engaged with cellar door sales are related to marketing – which itself appears related to the attraction of the wine tourist market segment – rather than sustainability [109]. Winery sustainability practices are instead being driven by a top-down approach by the export focused national body, rather than tourism or even what wineries themselves may want to focus on with respect to sustainability. Yet, as survey results and comments from respondents demonstrate, there is often substantial divergence between the interests and perspectives of winegrowers and national level initiatives, which may lead, in some cases, to substantial resentment of such initiatives, especially if the sustainability practices that winegrowers have to adopt to be part of SWNZ are not seen as providing an economic return. For some New Zealand wineries, the mandatory nature of this program and the cost involved to be a member appears prohibitive. This effect appears to be result in a group of wineries who regard themselves as penalized in terms of export potential purely by the inflexibility of the sustainability indicators of the SWNZ rather than their preferred strategies.

The New Zealand wine industry also appears to have significant gaps in knowledge sharing within the context of sustainability and biosecurity. Although the industry explicitly supports biosecurity strategies at the national border level [28], there is much more limited attention to biosecurity at the winery scale. This is potentially a major management issue for wine tourism and tourism in rural areas given the risks that visitors represent to vineyards [8,9]. Given the importance of these environmental aspects to wine tourism and to other forms of food tourism in rural regions, research on tourism and biosecurity remains an area that requires urgent further research.

It is possible that the adoption of sustainability practices, as with the significance of wine tourism in business practices may be a function of stage in its lifecycle and/or the extent to which they are family-owned firms. However, there appeared no firm statistical support for that observation in the present study. Furthermore, the study also raises some fundamental questions about the sustainability

practices of rural tourism businesses and their comparability and poses significant questions as to what actually constitutes a tourism business, given that tourism does not have a standard industry classification. For example, the business models and innovation profiles of many rural firms are considerably different from that of wineries engaged in wine tourism, with wineries far more focused on sustainability and reducing energy consumption [109] than those in the New Zealand accommodation and restaurant sector [110], or even other tourism attractions. The understanding of rural tourism business sustainability practices therefore potentially needs to be grounded in awareness of broader sectoral demands on firms and constraints with respect to business strategy, rather than just 'tourism'. In particular, and as in the specific case of winegrowers, the partially-industrialised nature of tourism activities means that only a proportion of a business' customer base or income is derived from tourism and, as a result, any analysis of sustainability practices or other aspects of firm strategy and management require separating out the role of tourism in business decision-making as well as the relative mix between tourism and non-tourism influences in strategy setting [109]. Critically, the sustainability practices of New Zealand wineries and the national program to which they often have to belong is geared to practices within a specific site and, like many assessments of the sustainability of a firm or location, fails to adequately account for the impacts of visitor mobility on the footprint of the business. Whether this be the biosecurity risks posed by to winegrowers by tourists on their way in, the environmental costs of transporting wine to international consumers, or how researchers conceptualize tourism firms in rural or other areas.

Author Contributions: C.M.H. and T.B. conceived and designed the survey; T.B. performed the 2010 and 2015 surveys; T.B. analyzed the data; C.M.H. and P.C. contributed advice with analysis; T.B. and C.M.H. wrote the paper.

Conflicts of Interest: The authors declare no conflict of interest.

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