

Adapting for Resilience: Exploring the Advent of Virtual Experiences in Pandemic-era Wine Tourism Offerings

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When nations across the world were brought to an abrupt hiatus by the ravaging pandemic, the tourism industry was left in a quagmire. Tourism ventures were faced with the option of either suffering through an onslaught of hardships; while hoping to be relieved of it soon or adapting for resilience in order to cushion the blow. If they choose the latter, the conventional playbook of experience offerings and customer interactions had to be reinvented. It was a choice that the wine tourism sectors in America and Europe made; a choice that charted its course towards embracing the attributes of virtual tourism. Wineries curated virtual vineyard tours, hosted virtual tastings and conducted virtual interactions over wine. Although these virtual experiences did not exude the panache of being present in the midst of a vineyard or winery's immersive atmosphere, virtual wine tourism became increasingly popular. This newfound popularity and its outcome of garnering new clientele for wines and wine tours, in turn, boosted competitiveness in virtual experience offerings amongst wineries and wine regions. Despite this phenomenal adaptation of the wine tourism sector for resilience, there have been few peer-reviewed studies examining the enrichment of the sector through virtual experiences during the pandemic. The paper, thereby, explores the trajectory of virtual experiences in the pandemic battered wine tourism sector and the influence of such experiences in shaping consumers' appreciation of wines and wine destinations. The paper discusses the failings and challenges of incorporating virtual experiences in wine tourism, along with appraising the future forward of using such experiences in the sector.

Keywords: *tourism digitalisation, virtual tourism, virtual wine experiences, virtual wine tasting, virtual wine tours*

Introduction

Since the mid-1990s, the wine tourism segment has progressively grown to emerge as one of the most significant niche sectors in the 21st-century global tourism market. Its financial contribution to a wine country's annual economy has been substantial. According to Atout France estimates, in 2016, over 10 million wine tourists visited France's wine regions, spending a total of 5.2 billion euros (Explore France 2022). Hochschule Geisenheim University (2019) and German Wine Institute's joint survey for the German wine region indicate a flow of 50 million wine tourists annually, generating 5.5 billion euros. According to Tourism Research Australia, in 2018, 8.4 million people visited Australian wine regions,

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with total spending of 9.6 million dollars (Allen 2019). In the United States, wine tourism generates around USD 20 billion in revenue (Mintel 2017), while 27% of all holiday visitors to New Zealand visit a winery and spend just over USD 2.7 billion per year (New Zealand Winegrowers Inc. 2018). Furthermore, wine tourism is one of the very few national industries that are concentrated outside metropolitan areas, and so it can play a vital role in regional development, employment generation, business growth, tourism and corporate investment (Galloway et al. 2008). These trends have been witnessed in many of the 'New World' wine countries venturing into wine tourism, such as Australia, New Zealand and South Africa, to name a few.

The prominence of the wine tourism segment to a country's annual GDP and rural development resulted in an annual series of UNWTO Global Conferences on Wine Tourism, beginning in 2016. The initiation of this conference series established wine tourism as an emerging segment of significance. It also enabled the opportunity of steering the development of the wine tourism segment toward a holistic and sustainable future. All these developments in the wine tourism industry halted abruptly when the COVID-19 pandemic hit the world in 2020. The United Nations World Tourist Organisation argued that tourism was one of the sectors most affected by the COVID-19 pandemic, impacting economies, livelihoods, public services and opportunities on all continents (Jones 2022). The wine tourism sector enjoyed no exception to it. National Lockdowns and International border closures drastically reduced the number of tourists to the wine regions worldwide, plummeting the revenue of wineries majorly dependent on wine tourism. According to the Global Report of COVID-19 Impact on Wine Tourism published by winetourism.com (2021), 83% of surveyed wineries saw their turnover negatively impacted. This effect has been drastic in most cases, cutting income by over half compared to the previous year. While the disruption caused by COVID-19 has undoubtedly lent a heavy blow to the revenues of countless wineries worldwide, it has also been a thrust towards digitalisation in wine tourism offerings. Several wineries relied on digital tools to cope with COVID-19 challenges and remain in contact with their consumers (Alebaki et al. 2022). Wineries adopted a variety of social media platforms to engage with customers through online events. In particular, virtual tasting and tours witnessed exceptional success during the pandemic. Their success propelled the discussion toward embracing virtual experiences as part of a winery's long-term tourist engagement strategy, going beyond the pandemic.

Against this backdrop, the present paper aims to answer the question: How did wine tourism display resilience to the COVID-19 setback through the advent of virtual experiences? To answer this, the paper elaborates on two objectives. The first objective is to appraise the various virtual engagements offered by different stakeholders to compensate for the wine tourism industry's closure during the pandemic. The second objective is to assess the customer's reception of these virtual offerings and their impact on their future wine tourism and procurement plans.

The first section lays down the literature review for the paper's research. This comprised establishing an understanding of wine tourism offerings before the pandemic, the intricacies of its economics for a winery's revenue and the incorporation of digitalisation by the wine tourism sector in the face of the COVID-

19 adversity. The second section articulates the methodology adopted to achieve the paper's research objectives. The third section elaborates on the two predominant virtual offerings, virtual tasting and virtual tours; the stakeholders behind these formats, the wine tourists they cater to and the experiences and perceptions that they offer. The fourth section enlists a set of recommendations to enhance the experience of both these virtual formats and their incorporation into the post-pandemic wine tourism offerings. The last section of the paper concludes.

Literature Review

Wine Tourism Offerings before COVID-19

Wine tourism, also known as Enotourism or Vinitourism, is classified as a form of special interest tourism (Hall et al. 2000) comprising visits to wine cellars, wineries, vineyards, museums, and wine festivals and events in wine-growing regions. Initially, wine tourism was driven by the primary motivation of tasting and buying wine, with the secondary motivation of witnessing the landscape of wine. In recent years, the motivation behind wine tourism has become multi-layered, in line with the notable shift in the wine region's imagery. Imagery shifted from an overriding landscape theme of neatly cultivated vineyards set within wine regions with unspoilt natural scenery to a stronger emphasis on the natural scenery, and cultural and leisure-rural features of the wine regions (Bruwer and Alant 2009). This shift from an indulgence in wine-centrism to nuances of aesthetic experiences has broadened the range of motivations driving wine tourists, reflected in their profiles. According to the 2017 Mintel Report, wine tourists can be categorised into four groups; wine lovers (very knowledgeable about wine; 15% of all wine tourists), wine interested (enjoys wine but takes a more relaxed attitude toward wine education; 55% of all wine tourists), wine curious (satisfied with a basic knowledge of wine and enjoys doing other things while on vacation; 17% of all wine tourists), and wine disinterested (along for the ride; 12% of all wine tourists). The wine tourism sector accommodates these diverse tourist profiles, interests and motivations by offering tailored experiences contextualised to the distinct characteristics of its winescape. While these offerings are unique, they share commonalities in their framework of experiences.

The desire to learn about wine is accommodated by offering educational experiences such as harvesting and stomping grapes, witnessing the wine-making process, tasting wine varieties, and learning about wine blending and wine-food combinations. The desire to create memorable experiences in an aesthetic environment is accommodated through winescape activities or wine routes. Indulging in local gastronomical experiences, vineyard picnics, walking/cycling/driving through a vineyard and the wine region's picturesque rural roads are common winescape activities. Hot-air ballooning, horseback riding, horse-drawn carriage touring, snow-shoeing and skiing through snow-covered vineyards are some of the unconventional winescape activities. Individual wineries curate these varied engagements to enable tourists to immerse in the distinct appeal of their

vineyard and the corresponding wine region. In contrast, wine routes are experiential routes designated by national governing bodies to allow tourists to experience the social, cultural and environmental attributes that lend a distinctive character to a wine region (López-Guzmán et al. 2014). These routes are a unique feature of the wine tourism sector in Europe. According to Bruwer (2003), each wine route although similar in terms of content is endowed with its own regional or geographical identity. Last but not least, the overlapping desire to socialise with fellow wine lovers and enjoy speciality wines with local gastronomical delights in a relaxed setting is accommodated through wine festivals and events. These wine festivals and events enable tourists to learn about the delicate pairings of wine and food from top regional chefs and mixologists and enjoy the display of regional culture through art displays and music performances. While each wine country hosts annual wine festivals and events, France, Italy, Spain, and the USA host several wine festivals and events throughout the year, attracting millions of tourists.

Economics of Wine Tourism and COVID-19

Wine tourism for a tourist is the culmination of several unique experiences: the ambience, atmosphere, surrounding environment, regional culture and cuisine, local wine styles and varieties (Carmichael 2005). For the wine cellars and wineries, it is a vital revenue stream. Each supermarket chain displays a wide range of wines on its shelves, creating fierce competition for sales. In such a situation, wine enthusiasts often stick to a few brands they have tried and enjoyed before rather than experimenting with new brands on display. Wine tourism allows wineries to have their wine varieties sampled by wine enthusiasts informing their purchasing decisions. More often than not, wine tourists buy a bottle or two from the cellars and tasting rooms of the wineries they visit. Wine tourism also allows the wineries to establish customer relationships through one-on-one interactions and brand reputation through a satisfactory wine tourism experience at the winery. This is significant in relation to domestic tourists as they return to the winery's cellars, tasting rooms or wine clubs for future wine purchases instead of procuring wine from the supermarket. For instance, among Italian citizens, one-third of the entire population shops in wineries (Colombini 2013). Direct-to-customer (DTC) wine sales provide immediate cash income with unbeatable profit margins for wineries (Colombini). As a result, DTC sales comprise a significant percentage of the revenue for many small and mid-scale wineries. In Germany, 12% of the annual wine sales volume is purchased at cellar doors following wine tastings, representing a value share of 22% with a total turnover of €1.44 billion (Szolnoki et al. 2021). The direct-to-consumer sales represent 65% of California's average winery revenue, driven by tasting rooms and clubs (Szolnoki et al. 2021). Not all DTC sales occur through wine cellars, tasting rooms or wine clubs. Wine festivals are another tourism offering that enables DTC sales. They help family-run estates and small wineries without a huge marketing budget to boost their wine sales.

The economics of wine tourism goes beyond the benefits to a winery's revenue. According to the Wine Tourism Observatory for the Cities of Wine organisation, each euro spent on wine produces at least four euros on meals, sightseeing tours or

shopping (Colombini 2013). The contribution of wine tourism to its local gastronomical sector is especially significant. Pairing wine with the right food combinations enhances its sensory experiences. For wineries, they must demonstrate the combinations which enrich their wine's flavours and textures so that wine tourists are not disappointed when they consume the purchased wine within the comforts of their homes. Wineries collaborate with local chefs and restaurants to curate their wine-food pairings and conduct food pairing sessions.

With the onset of COVID-19, the national lockdowns and international border closures that came in its wake, the significant revenue stream of DTC sales was hard hit. Suspension of wine tourism meant wineries had to close down wine cellars and cancel participation in wine festivals/events, substantially cutting their income. The situation has been devastating for family-run estates and small businesses whose sales solely relied on DTC sales. Furthermore, a wine estate cannot stop the clock on production, lay off staff and wait out the situation (Hesford 2020). Storing wine in barrels for too long risks spoilage. It has to be bottled. However, small wineries do not tend to have enough space to store two consecutive vintages. As a result, millions of litres of wine had to be sent for crisis distillation for government subsidy, a scenario that unravelled in much of Europe. For instance, in France, the government supported French winemakers by funding a crisis mechanism for distillation (Reuters 2020). This aid still fell short of the distillation requests made by French winemakers, risking a million litres of wine still getting spoiled.

Digitalisation in Wine Tourism Sector

According to the United Nations World Tourism Organisation (2020), one of the most substantial impacts of the crisis is the acceleration of digitalisation. Before the pandemic, the wine industry's digital presence and engagement were negligible. Wine regions, wine routes and wine festivals used digital platforms minimally for tourism promotions. Wineries indulged in little to no digital engagements. However, the pandemic-induced financial setback forced the historically traditional wine industry, significantly less digitalised than other industries, to rapidly realise the importance of up-to-date technology (Halmari 2020). Wineries embraced digital tools to adapt their business model and strategies to stay viable to fit the rapidly changing trading environment (Szolnoki et al. 2022), albeit with regional disparities. American and Australian wineries proactively ventured into the digitalisation of wine tourism following the introduction of worldwide lockdowns. The entrepreneurial drive to seize new opportunities and learn by doing, strongly motivated by the vision of progressive owners, was cited as a powerful force to unite staff and survive, but thrive, during the crisis (Szolnoki et al. 2022). It is essential to note that wineries in America and Australia had already begun experimenting with virtual reality tools to enhance wine tourism marketing years before the pandemic struck. In contrast, the Old World European countries initially exhibited a cautious approach toward engaging in the virtual space. They were, perhaps, culturally more reluctant to adopt new technologies when the return on investment had not yet been proven, and the urgency was not so apparent (Szolnoki et al. 2022). Once the

Old World became fully aware of the attributes of virtual wine tourism offerings, they adopted their preferred virtual engagement strategies. In this eventual transition towards digitalisation of tourism offerings, Germany and France present interesting cases of wineries' involvement in virtual tourism curation. In Germany, individual wineries developed virtual tourism offerings supported by the Wine Institute and prominent newspapers through promotion. The platform "cheerswith.de" was established, offering wineries a free service for their virtual offerings (Szolnoki et al. 2021). Conversely, virtual offerings in France were majorly curated by wine regions and the Tourism Department rather than by individual wineries. The virtual offerings so created were hosted on the French Tourism Ministry's official website. A staggeringly high percentage of wineries/wine regions in the Old World did not engage in virtual wine tourism.

Despite the variable digitalisation of wine tourism by the wine industry, it is noteworthy that a substantial section embraced digital means and revolutionised wine tourism offerings as we knew before the pandemic. Through digital platforms such as Zoom, Google Meet, Instagram, Facebook and Youtube, wineries curated creative and innovative engagements to connect with wine enthusiasts worldwide. Virtual wine tourism engagements can be categorised into four typologies; Virtual Wine Talks, Virtual Wine Events, Virtual Tastings and Virtual Tours. For this paper's research into virtual experiences in wine tourism, Virtual Tasting and Virtual Tours was selected for further inquiry.

Methodology

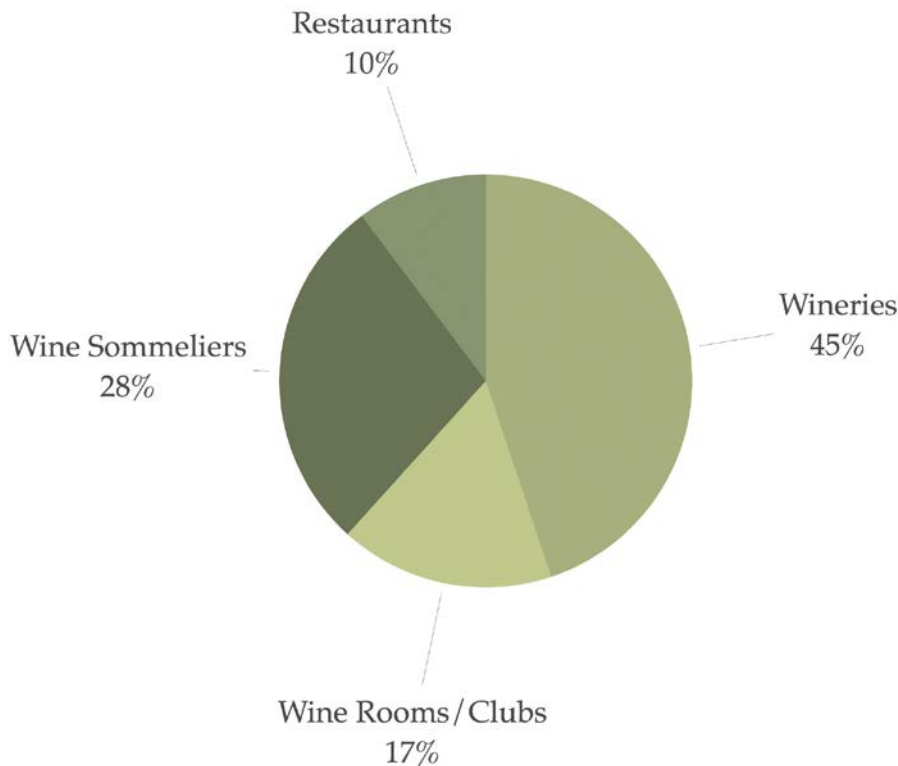
The unique research enquiry of the paper required developing a methodology that weaved together various methods from qualitative research. The methodology developed comprises three phases. The first phase was a literature review of wine tourism offerings before the COVID-19 pandemic, the economics of tourism on a winery's revenue and the digitalisation of wine tourism offerings during the pandemic. This was done by referring to journal articles, conference papers and news reports online. The second phase involved manual tracking of virtual wine tourism offerings. The tracking involved making a country-wise inventory of virtual tasting and virtual tours by following established wine blogs, news websites and winery/wine tour pages on social media platforms such as Facebook, Instagram and Twitter. The inventory included event format details and stakeholder details. This step brought to notice that USA, Germany and Australia hosted the most virtual tastings and tours. The inventory was thereby filtered to include only virtual engagements being hosted in these three countries to ease meeting the research objectives. These events were further filtered based on exclusion-inclusion criteria such as the willingness of stakeholders to collaborate in the research, open group engagements, event costs and delivery logistics. This resulted in a set of 14 virtual tastings and 11 virtual tours. From this set, 2 virtual tastings and 2 virtual tours per country were selected for further investigation during the third phase. The third phase utilised the research methods of participant observation and survey questionnaire to establish a meticulous understanding of the virtual offerings. Each of the selected

virtual offerings was personally attended to experience the format and interactions therein. This participation took the form of passive participant observation. Towards the end of the virtual event, a feedback session was conducted with fellow participants and the host in attendance. The feedback session involved a round of casual conversation regarding their experience, followed by filling in online survey forms. The survey form constituted two types of questions; 10 open-ended questions and 10 ordinal scale questions. It started with open-ended questions relating to their age, place of residence, association with wine, interest in wine tourism, prior experience in undertaking wine tourism, information source of the virtual event attended, motivation for attending the event, qualities of the attended event they enjoyed and qualities of the attended event they did not like. The ordinal scale questions pertained to rating their perceptions, their experiences and their satisfaction. A total of 52 online survey forms were filled in and investigated for the research.

Analysis

Virtual Tasting

Virtual Wine Tasting is an engaging, interactive format developed by the wine tourism sector in the wake of the pandemic. It enabled wine enthusiasts to taste new wine vintages from across the world from the confinement of their homes. The virtual tasting format usually comprised purchasing a package of selected wines, followed by logging into a digital platform like zoom, google meet, or Facebook live to connect with the concerned winery or wine expert and enjoy a guided wine tasting session. During the session, the host would discuss a range of topics such as winemaking philosophy, the nitty-gritty of running a vineyard and a cellar, the speciality of the selected vintages being tasted and the ideal food pairings that go with them. While the virtual tasting session allowed viewers to taste new wines and acquire new knowledge, it allowed wineries to engage in DTC wine sales, making it immensely popular among wineries entering the realm of virtual offerings during the pandemic. According to a study conducted by Szolnoki et al. (2021), 36% of the surveyed wineries introduced Virtual tastings during the pandemic, in contrast to only 3% of the surveyed wineries hosting them before the pandemic. However, wineries were not singularly motivated to host virtual by the opportunity for DTC wine sales. Wineries also introduced virtual tastings to create brand awareness, acquire new customers and build customer loyalty. However, virtual tastings were not a feature exclusive to the wineries. Figure 1 illustrates the different stakeholders that hosted virtual tastings from April 2020 to November 2021. The variation in host profiles led to different ways of conducting virtual tastings; a phenomenon that resulted in three broad typologies of virtual tasting events; Happy Hours (4% of all virtual tasting events), Livestream Tasting (47% of all virtual tasting events) and Personalised Tasting (49% of all virtual tasting events). Table 1 details the character of each typology and the tourist profile that they catered to.

Figure 1. Composition of Stakeholder Hosting Virtual Tasting Events**Table 1.** Details of Virtual Tasting Typologies Hosted

Virtual Tasting Typology	Host Profile	Participant Profile	Wine Tourism Experience Incorporated	Event Requirement
Happy Hours	Restaurants Wine Rooms-Clubs	Wine Curious Wine Interested	Socialisation over Wine	Bring your own Wine Pre-order from a selection of wines
Livestream Tasting	Wine Rooms - Clubs Wine Sommeliers Large Wineries	Wine Interested Wine Lovers	Sommelier led wine tasting Food-wine pairings Entertainment activities	Pre-Order from a selection of wines Wine package delivered by host
Personalised Tasting	Wine Sommeliers Large and Small Wineries	Wine Interested Wine Lovers	Sommelier led wine tasting Food-wine pairings Entertaining Activities	Wine package delivered by host

The study showed that Happy Hours was the most unstructured and casual virtual tasting format. It exhibited the same characteristics as displayed by wine festivals where wine-disinterested, wine-curious and wine-interested tourists gather with the motivation of socialising over wine and engaging in entertaining activities. Additionally, while COVID-19 restrictions impacted restaurants and wine rooms/clubs, they are not the driving stakeholders of wine tourism. As such, Happy Hours

cannot be considered a virtual adaptation of the wine tourism offerings. Both Livestream Tasting and Personalised Tastings, on the other hand, presented a structured wine experience and incorporated many of the components of conventional on-site wine tourism. Table 2 provides a comparison between the two formats.

Table 2. Comparison between Livestream Tasting and Personalised Tasting

Attributes	Livestream Tasting	Personalised Tasting
Event Priority	Brand Awareness	Direct Customer Sales
Event Size	Most times 100 and above participants	25-40 participants
Event Requirement	Register and pre-order from a selection of wine. Purchase is not always compulsory. Participants can follow the session with their own wines.	Register for the event and a specially curated wine-food package delivered by the host before the tasting.
Event Charges	12% of events free of charge. 87% of events have a ticket cost. Delivery of exact wine bottles to be tasted charged additionally.	All events are with ticket Costs that is inclusive of wine-food package
Hosting Platform	Youtube Live Facebook Live Google Meet	Google Meet Zoom Webex
Educational Component	Learning about wine styles, wine aroma-flavor-notes, wine tasting method, wine-food pairing	Learning about wine styles, wine aroma-flavor-notes, wine tasting method, wine-food pairing. Learning about wine serving and handling. Learning about wine production and wine branding.
Complementary Activities and Entertainment	Celebrity Partnerships, Comedian Gigs, Live Music Shows, Live Cooking Demonstration by Chefs, Blending Sessions by Mixologists	Follow-along cooking classes with chefs. Follow-along blending sessions with mixologists.
Interaction Opportunity	Due to the huge number of participants, majority of times, there is no or limited interaction with the host	There is ample time allotted in the schedule for interaction with the hosts and other guests

While each typology of the virtual tasting had its unique attributes and catered to a specific clientele, the study found that the satisfaction level was the highest (81%) among participants of personalised virtual tastings. They attributed it to the intimate nature of the tasting, where they could casually interact with the winery and its varied collaborators. Most participants especially appreciated the personal touch that the wineries brought into the tasting. Wineries used the wine package as the first point of establishing rapport with the participants by including a personalised note and a food pairing guide or little pouches containing nuts, dried fruits, and chocolates. The talk during the tasting became the second point of adding a personal touch by sharing their winemaking journey, inspirations, and trials and tribulations through the years. Livestreams were found to have a satisfaction level of 67% among their participants. The reasons cited by participants for their lower satisfaction

were the overwhelming number of participants making it feel like a mass event, the inability to properly interact with the host/collaborators and difficulty in procuring wines selected for the tasting. However, an interesting trend was the diversity of participants based on their geographical locations. Purchasing wines chosen for the event was not compulsory for Livestream Tastings. Participants could follow the session while sipping the wine available to them. This enabled participants in a different country/continent where the selected vintages were not available to join the wine tasting sessions. 53% of Livestream participants did not belong to the same country as the event host. In contrast, personalised tastings always had participants belonging to the same country as the event host due to the logistical requirement of package delivery.

Virtual Tours

As discussed previously during the paper, the winescape forms an integral part of the experience of visiting a winery and developing an appreciation for its vintages. Although virtual tasting allowed wineries to bring their wines and brand story to a diverse set of potential customers, it did not enable them to showcase the natural and socio-cultural attributes that made their wine and brand uniquely distinct. Wineries, thus, curated Virtual Tours. Virtual tours are not distinctly different from personalised virtual tasting; in all likelihood, it is an improvisation of personalised virtual tasting to cater to the long-term motivation of drawing tourists post-pandemic alongside the short-term motivation of enabling direct customer sales. Table 3 illustrates the comparison between Personalised Virtual Tasting and Virtual Tour formats.

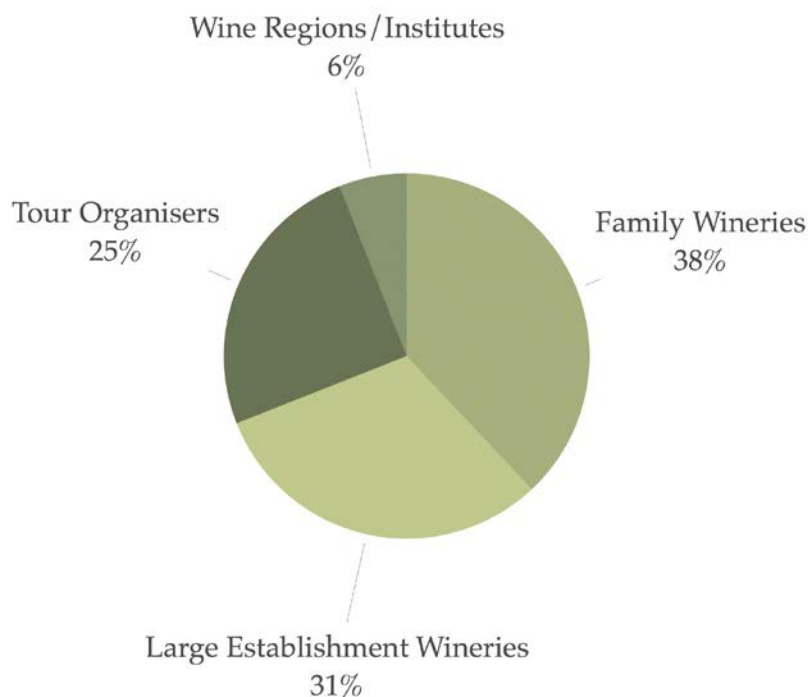
Table 3. *Comparison between Personalised Virtual Tasting and Virtual Tour*

Attributes	Personalised Virtual Tasting	Virtual Tour
Event Motivation	Direct Customer Sales	Entice Visitors for Post-Pandemic Travel
Event Package	Wine-Food Package delivered by the host before the event	Wine-Food Package delivered by the host before the event
Educational Component wrt. Wine Consumption	Learning about wine styles, wine aroma-flavour-notes through wine tasting, wine tasting tips, Wine serving and handling tips	Learning about wine styles, wine aroma-flavour-notes through wine tasting, wine tasting tips, Wine serving and handling tips.
Educational Component wrt. Wine Production	Lecture on wine production, wine branding.	Visually exhibit the different stages and spaces of wine production; from viticulture to fermentation to storage.
Winery Visitation	N.A	Virtual mediums of viewing the winery.
Complementary Activities and Entertainment	Follow-along cooking classes with chefs. Follow-along blending sessions with mixologists.	Recipe demonstration by local chefs. Visual presentation of the region's attractions.
Local Food Experience	Cooking sessions linked to the wine varietal, not the wine's	Local Chefs invited to demonstrate local recipes to go with the wine varietal.

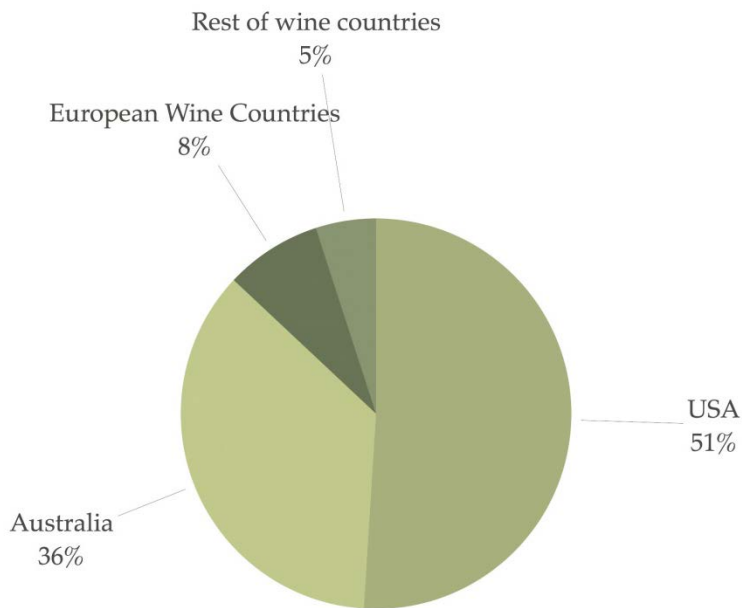
	geographical origin.	
Interaction Opportunity	Ample time allotted for interaction with the hosts and activity collaborators	Ample time allotted for interaction with the hosts and activity collaborators. Additional opportunity of interacting with winery staff incharge of different stages of wine production.

Virtual tours were similar to a personalised virtual tasting, but instead of complementary activity, they had the added feature of a tour through the winery or wine region. Just like the personalised virtual tasting, the tour can be enjoyed from the comforts of a participant's home through a laptop or a smartphone and by logging into easy-to-use interactive platforms such as zoom and google meet. Simply put, virtual Tours are an enriched format of virtual tasting. Wineries offering virtual tours were motivated by long-term prospects of enticing participants to visit the winery and the short-term opportunities of enhancing DTC sales and brand awareness. Most wineries hosted virtual tours on their own. These wineries were usually Large-establishment wineries or middle-scale family wineries with the means and resources to develop a virtual tour. Few others collaborated with tour organisers and wine Regions/Institutes to host virtual tours. Figure 2 illustrates the stakeholders hosting virtual tours.

Figure 2. *Composition of Stakeholders Hosting Virtual Tour Events*



While most recent studies on wine tourism's virtual offerings provide data on the countries that introduced virtual tastings and their frequency, such a database is not available for virtual tours. The paper's phase 2 has made such data possible. Figure 3 illustrates the countries hosting virtual tours.

Figure 3. *Composition of Countries Hosting Virtual Tour Events*

Understanding how participants virtually engaged in a tour of the wineries/wine regions is noteworthy in the discussion. Wineries virtually took their participants on a virtual tour by incorporating one of the two modes: Walk-Along Video Tours (64% of all virtual tour events) and 360-degree Video Tours (36% of all virtual tour events). Table 4 illustrates the comparison between both these tour modes.

Table 4. *Comparison of Walk-along Video Tours and 360-degree Video Tours*

Attributes	Walk-along Video Tours	360-degree Video Tours
Host Profile	Family Wineries Tour Organisers	Large Establishment Wineries Wine Institutes/regions
Participant profile	Wine Lovers Wine Interested	Wine Lovers Wine Interested
Event Charge	More expensive than 360-degree Video Tours	Less Expensive than Walk-along Video Tours
Format Description	Similar to video-calling someone and walking around a place to show the scenes around with a narration.	Video of the host showing the various winery spaces in pre-recorded 360-degree format.
Tour Highlights	Architectural Spaces Vineyard	Architectural Spaces Vineyards Landscape Around Vineyard Tourist Attractions around Vineyard
Special Requirements	N.A	Few events require VR glasses for the tour to be more immersive. Others require the event to be streamed on a tablet for easy motion navigation.

Pros	Un-hassled virtual tour mode Meet and greet with winery staff	Can look all around a scene Idea of the vineyard's landscape and tourist attractions
Cons	Cannot look around a scene, or zoom into things Cannot ask questions during the walkthrough due to time constraints.	Complicated virtual tour mode for first-time users Cannot interact with staff Cannot ask questions during the walkthrough.

Although the medium of showing around the winery differs, the overall format of all virtual tour events is the same. All virtual tour events begin with a quick introduction to the winery and host. The winery tour in a mode suitable to the host follows. This tour concludes in the winery's tasting room. From the winery's tasting room, the host engages the participants in tasting selected vintages pre-delivered to their homes and other complementary activities and entertainment.

Both the virtual tour modes had unique attributes and catered to a specific clientele, however, the study found that the satisfaction level was higher (93%) among participants of walk-along video tours. They attributed it to the easy-to-follow template of the tour, where they could sit back and enjoy the sights and sounds of the scenes being shown on their screens. Most participants appreciated that they were shown what was happening in the vineyard, and the host brought in people working there to chat about their everyday life at the winery. 360-degree video tours were found to have a satisfaction level of 67% among their participants. Participants shared that navigation in the 360-degree video format is initially quite confusing and takes the attention away from what the host is trying to share about a particular space. Participants also felt that they were not able to immerse themselves in the tour in real time due to the 360-degree videos being pre-recorded.

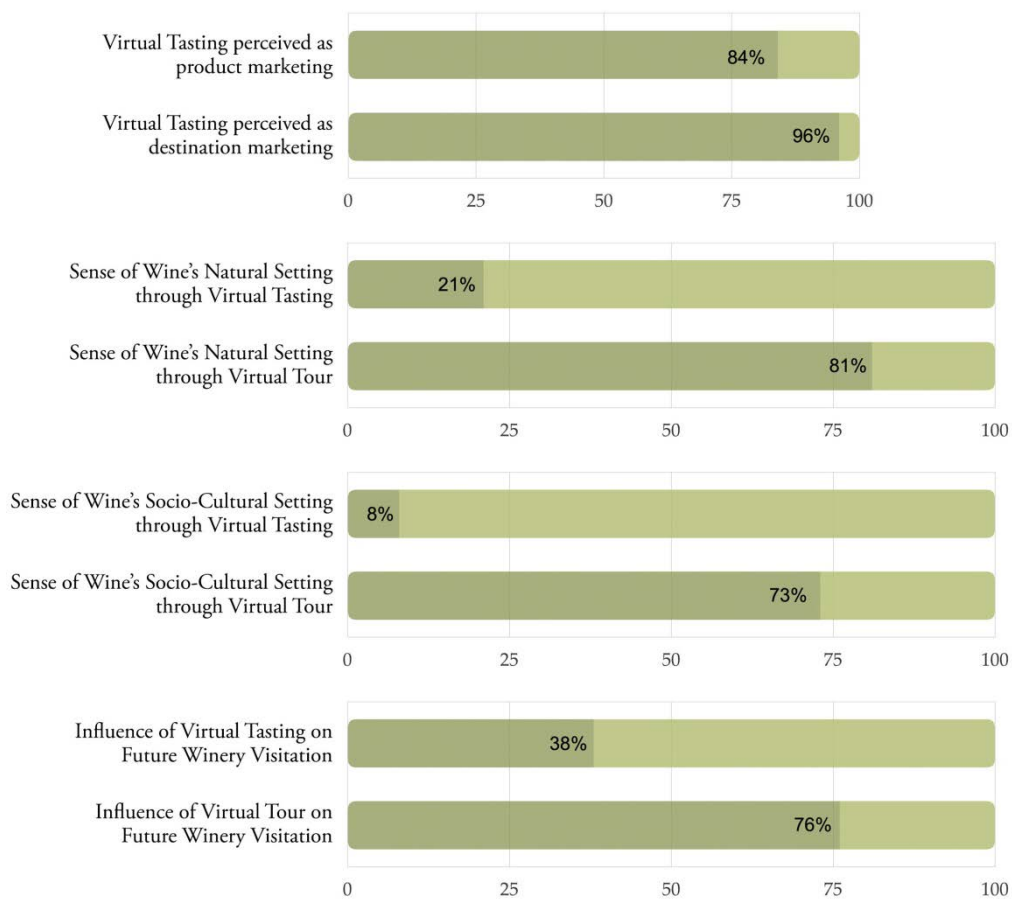
Participant Satisfaction of Virtual Tasting Vs. Virtual Tours

Amidst the pandemic-induced confinement of their homes, wine enthusiasts could revel in specific aspects of wine tourism, albeit in a virtual setting, through the curation of virtual tasting and virtual tours. It was found through participant feedback sessions that both virtual offerings had their own unique set of attributes that participants liked and disliked. Table 5 illustrates the qualities of virtual tastings and virtual tours that participants liked and disliked. The different qualities experienced by participants during the virtual tasting and virtual tours generated different perceptions of the respective events. Figure 4 illustrates the perceptions afforded by virtual tasting and virtual tours.

Table 5. *Qualities of Virtual Tasting & Virtual Tour Liked & Disliked by Participants*

	Most appreciated quality	Other appreciated qualities	Qualities disliked
Virtual Tasting	Educational Quotient	Complementary activities and Entertainment Brand Narrative Social Interaction	Tasting that included too much scientific jargon.
Virtual Tour	Narratives & Visual Richness	Personalisation & Intimacy People behind the Brand Educational Quotient	Tours being rushed due to time constraints

Figure 4. *Perceptions Afforded by Virtual Tasting and Virtual Tours to its Participants*



Discussion on Post-pandemic Discourse

The potential of virtual tasting to draw a diverse crowd of participants interested in experimenting with different wine vintages and brands has been well-recognised by individual wineries. As a result, many wineries and tasting rooms in Australia and USA have incorporated virtual tasting as a supplement to cellar-door tastings, although with a lesser frequency than during the pandemic. However, several other wineries (in the European wine countries and the rest of the New World) have

suspended their virtual engagement altogether following the opening up of lockdowns. By contacting the wineries hosting virtual tasting (from the first inventory made during phase 2 of the research methodology), it was found that only a mere 7% have continued the offering beyond December 2021. These offerings are mainly personalised virtual tastings for reservations by corporates or groups of friends and family. Upon reaching out to the organisers that have suspended their virtual offerings, they cited that while virtual offerings allowed them to engage with potential customers and continue DTC sales, neither of the offerings matched up to the profits of onsite wine tourism. They would rather expedite their time and energy in catering to onsite tourists, especially the wave of domestic tourists who have the potential of becoming a loyal customer base. However, these organisers have failed to realise the potential that virtual tasting has in attracting newer crowds of wine consumers and establishing brand loyalty. During the participant feedback session, it was noticed that virtual tastings, particularly Livestream tastings, engaged participants who identified themselves as wine-curious (satisfied with a basic knowledge of wine and enjoying doing other things while on vacation). The onus of this lies in that Livestream tastings incorporated a wide range of complementary activities such as cooking and mixology, as well as entertainment such as comedy, music and celebrity gigs. Employing these complementary activities as motivation for participation, wine-curious participants can be made aware of a wine brand and cultivate a likelihood for it. As such, Livestream tastings once in a while can have the same kind of impact that wine festivals do in attracting new crowds of people to try out new varietals of wine in a fun, relaxed environment, albeit in a virtual format.

Similarly, the potential of virtual tours to motivate its participants to engage in wine tourism following the end of COVID-19 restrictions has been well-ascertained by various wine regions/tourism organisations. For instance, the French wine regions and tourism organisations have pivoted towards using the digital modes that made virtual tours possible as a long-term destination marketing strategy. French wine regions have released 360-degree videos of wine regions on social media to inspire wanderlust among wine enthusiasts. The national tourism website also showcases 360-degree videos of wineries to entice potential tourists to indulge in the country's wine tourism. While these initiatives are significant in incorporating the innovative 360-degree video mode curated during the pandemic, a far more substantial impact can be generated by integrating them as part of their branding strategy. Today's wine buyers want to know more about the product they are consuming, where it comes from, the people behind it, and their stories. Customers are invested in a brand's narrative and ascribe value based on the connection they feel to it. As such, wineries could embed QR codes into their bottle labels that navigate to a 36-degree video tour of the winery. The video tour can inform the buyer of the wine's unique natural contexts, share the winery's story and showcase the team behind the product. This personalisation of the branding can be extremely helpful for small and medium family-owned brands that have to stand out from the rest of the brands on a supermarket shelf.

Conclusion

In the ancient Greek dialogue *Republic*, philosopher Plato wrote: “our need will be the real creator”. Before the pandemic, the wine industry had been making a substantially slow transition towards digitalisation. The challenges in the wake of the pandemic made it imperative for the industry to shed its inhibitions, embrace digitalisation, and reinvent its offerings to keep up with the times. However, the pivot toward digitalisation has not been uniform throughout the world. As underlined by the paper, the cultural mindsets of different wine countries resulted in varying degrees of engagement with digital tools to offset the impact of the pandemic on wine tourism. Similarly, wine countries, regions and wineries were motivated by different incentives to venture into offering virtual experiences. This prevented the development of one single format of virtual offering from being replicated worldwide, enabling varied ingenious virtual experiences to be explored by the wine industry. Through this paper, an understanding of virtual tastings and virtual tours has been attempted.

The paper acknowledges the different typologies of virtual tastings and virtual tours curated during the pandemic and elaborates in detail on their structure and experiential character. It investigates the participant's satisfaction levels pertaining to the attended virtual format and its reasons. It also sheds light on the qualities participants appreciated about virtual tastings and virtual tours and the qualities they did not like. This data is valuable for virtual hosts to reflect on to improve their chosen formats for greater participant satisfaction and appreciation. The study also revealed the participant perceptions afforded by virtual tastings and virtual tours. Virtual tastings provide an exemplary case of product marketing and virtual tours of destination marketing. Virtual tastings established brand visibility. Virtual tours established a personal connection to the winery's unique socio-cultural and natural context.

At this point, it is noteworthy to discuss the nuanced formulation of both virtual tastings and tours. Learning about new wine varieties and tasting them has been central to both virtual formats. All other wine-related activities were structured around it. As already elaborated in the paper, virtual tours are also an enhanced virtual tasting format that attempts to recreate the essence of travelling to a wine country for wine tourism. While this paper has tried to create a base understanding of virtual tastings being hosted as a pandemic response, this primacy of wine tasting to virtual formats opens opportunities for future research into enhancing the act of virtual wine tasting to become more engaging and sensorial. In particular, researchers working on VR wine tourism can focus on making the performance of wine tasting more experiential for the user.

To conclude, virtual tastings and virtual tours have immense potential for incorporation into the business model of wineries as a complement to onsite tourism experiences. Although many others have reaped their benefits during the pandemic, they do not see long-term benefits. The paper, however, argues otherwise. There will still be many wine enthusiasts who will not be able to travel miles to a wine region or a winery. Virtual experiences allow them to engage with a winery to either inform their decision to visit the winery or establish connections for long-

term DTC sales. Additionally, the recommendations laid out in the paper will help wineries expand their customer profile and forge new connections. The wine tourism sector needs to consciously assess these recommendations and the long-term benefits that the incorporation of virtual formats would provide them. There is no doubt that the advent of virtual experiences has proven that the wine tourism sector is resilient in the face of adversity, but must it wait for another mishap for innovative diversity and resilience to be imbibed in its regular workings?

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