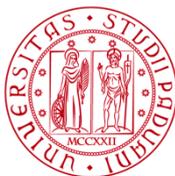# The impact of Covid-19 on wine consumers and wine tourists behaviour: changes, their drivers and new perspectives

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CORSO DI DOTTORATO DI RICERCA: **Land, Environment, Resources, Health (LERH)**

Ciclo: XXXIV

L'impatto della pandemia di Covid-19 sul comportamento dei consumatori di vino e degli enoturisti: i cambiamenti, i loro driver e nuove prospettive

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TABLE OF CONTENTS

ABSTRACT

Wine has become one of the pillars of the international agri-food market, to the point that it currently attracts billions of consumers worldwide every year. Italy is a leading force in wine production, consumption, and trade in the wine scenario next to historical players like France or Spain and more recent *New World* actors like the USA. In parallel, the wine tourism phenomenon has grown dramatically, leading to a great offer and supply differentiation and increasing competitive pressure for actors willing to operate in the business. As the growing wine tourism literature mainly dates back to the early 2000s and focuses on so-called New World wine regions, there is an urge for updated information on the latest sector evolutions.

Moreover, the Covid-19 outbreak brought unmatched, profound changes to our known normality, jeopardising international trade, tourism, and all countries' economies and societies. With this in mind, this doctoral thesis explores the effects of the current pandemic on wine consumers and wine tourists' behaviour.

Chapter 1 analyses the lockdown effect on Italians' wine consumption by combining descriptive techniques with binary logistic regression. Chapters 2 and 3, instead, apply structural equation modelling (SEM) to explore if and how the pandemic has affected wine tourism intentions. Precisely, chapter 2 focuses on Italian and French wine tourists' travel intentions and considers the effects of personal Involvement with wine, situational Involvement with wine connected to the times of home confinement, solidarity, Covid phobia and financial constraints caused by the pandemic. Chapter 3 proposes a similar study on USA wine regions visitors while embodying risk attitude and Covid-related time constraints to travelling. The simultaneous modelling of positive factors and restraints aims to reduce potential distortions that can arise when, as past studies have done, only positive or negative drivers of consumers behaviour are considered.

Under the need of exploring recent wine tourism developments, the present work further analyses the emerging phenomenon of online wine tourism experiences. Specifically, chapter 4 explores the antecedents of interest in partaking in online wine tourism, embodying Covid-related factors (both positive and negative) jointly with other key drivers reported by the literature. Finally, Chapter 5 presents the preliminary findings of a pioneering choice experiment on a panel of Italian wine tourists involving online wine tastings, which are the prevalent form of remote wine tourism adopted by the sector's practitioners.

RIASSUNTO

Il vino è diventato uno dei pilastri del mercato agroalimentare internazionale, con un crescente bacino di consumatori in tutto il mondo. In questo contesto, l'Italia è una delle forze trainanti del settore vitivinicolo a livello mondiale per produzione, consumo ed in termini commerciali accanto ad attori storici come Francia o Spagna e ad attori più recenti, appartenenti al cosiddetto Nuovo Mondo, come gli USA. Parallelamente, il fenomeno dell'enoturismo si è notevolmente espanso portando ad una grande differenziazione della domanda e dell'offerta, nonché ad una crescente pressione competitiva per gli attori che intendono operare nel business. Poiché il crescente corpo della letteratura sull'enoturismo risale per lo più ai primi anni 2000 e si concentra sulle cosiddette regioni vinicole del Nuovo Mondo, c'è necessità di informazioni aggiornate sulle ultime evoluzioni del settore. Inoltre, la crisi generata dal Covid-19 ha rivoluzionato la nostra quotidianità, alterando fortemente le dinamiche dei mercati e delle società mondiali. Questa tesi di dottorato mira ad esplorare se e come l'attuale pandemia ha modificato il comportamento dei consumatori di vino e degli enoturisti. In particolare, il capitolo 1 analizza l'effetto del primo lockdown sui consumi di vino degli italiani combinando tecniche descrittive e regressione logistica binaria. I capitoli 2 e 3, invece, applicano un modello ad equazioni strutturali (SEM) per esplorare l'impatto della pandemia sulle intenzioni a viaggiare degli enoturisti. Nello specifico, il capitolo 2 si concentra sugli enoturisti italiani e francesi includendo gli effetti sia del coinvolgimento personale con il vino, che del coinvolgimento situazionale legato ai periodi di confinamento, della solidarietà verso i produttori nazionali, della paura del contagio e dei vincoli finanziari causati dalla pandemia. Il capitolo 3 propone uno studio simile su un panel di enoturisti statunitensi, ma include nuove variabili: l'attitudine al rischio ed i vincoli di tempo al viaggio legati al Covid. La modellazione simultanea di fattori positivi e limitanti rispetto al comportamento dei consumatori mira a ridurre le potenziali distorsioni che possono sorgere quando, come in studi esistenti, viene considerato soltanto uno dei due aspetti. Inoltre, questo progetto investiga i recenti sviluppi del turismo del vino analizzando il fenomeno emergente delle esperienze enoturistiche online. In particolare, il capitolo 4 esplora i driver dell'interesse a partecipare all'enoturismo online, considerando fattori legati a Covid (sia positivi che negativi) ed altri elementi chiave riportati dalla letteratura. Infine, il capitolo 5 presenta i risultati preliminari di un innovativo esperimento di scelta svolto su un panel di enoturisti italiani ed incentrato sulle degustazioni di vino online, la forma prevalente di enoturismo a distanza adottata dagli operatori del settore.

INTRODUCTION

There is no doubt that wine has become one of the world's most popular beverages (Goncharuk, 2017). In 2020, the estimated world wine production reached 280 million hectolitres from a total world area under vine of 7.3 million hectares, and the global wine consumption exceeded 230 million hectolitres (OIV, 2021). As a consequence, wine is currently one of the most traded food products (Heijbroek, 2003): the total trade volume of wine has crossed 100 million hectolitres (105.8 in 2020), generating a 30 million euros turnover (OIV, 2021). In this scenario, Italy stands out as one of the sector's top players. The nation is the first wine producer (47.5 million hectolitres in 2019; OIV 2021) and the third wine consumer worldwide (22.8 million hectolitres in 2019; OIV 2021) after France and the USA. The latter is the biggest consumer of wine globally, drinking 33 million hectares a year. Italy also covers a significant role in the wine trade. In 2019, the country traded 20% of the wine exported globally and tied with Spain, recording the greatest export volume among all nations (21.4 million hectares in 2019; OIV 2021).

Wine's significant importance in Italy comes from the deep connection between the product and the local culture. During the Roman empire, wine, bread, and olive oil constituted the Mediterranean Triad, which the Church adopted to identify the Roman culture in contraposition with the barbarians (Capatti & Montanari, 2003). Wine is also a symbol of the Mediterranean diet, which in 2010 became part of the UNESCO's list of Intangible Cultural Heritage of Humanity (UNWTO Global Report on Food Tourism, 2012). To date, the Italian wine heritage counts over 500 wines registered and protected as Geographical Indications (G.I.), which the European Commission defines as "products whose quality, reputation or other such characteristics relate to their geographical origin". This strong bond reflects on alcohol consumption since, compared to other alcoholic beverages like beer and spirits, drinking wine is more rooted in the Italian population's habits: daily wine drinkers account for 17.6% of the population, while only 5.3% and 0.6% of consumers drink beer and spirits daily, respectively (ISTAT, 2020).

Wine consumption frequency is strongly connected to the context in which Italians drink wine, which mostly corresponds to meals and social occasions. Sociality played a significant role in rooting wine consumption among Italian drinkers, particularly the habit of *aperitivo* when the wine is typically consumed before meals, either by the glass or mixed in cocktails.

Accordingly, almost 40% of the Italian population usually drinks alcoholic *aperitivo* (ISTAT, 2020).

The increasing attractiveness of wine at a national and international level contributed to transforming the product into an actual reason for travel (Roberta Garibaldi, Stone, Wolf, & Pozzi, 2017), fuelling the phenomenon of wine tourism. The literature defines wine tourism as a form of special-interest tourism (O'Neill & Palmer, 2004) encompassing travel experiences primarily motivated by the willingness to taste local wine (C. M. Hall, 1996) and to engage with the winescape, i.e. with the whole wine region and its attributes (Alebaki & Iakovidou, 2011). Past research highlights the crucial strategic role played by wine-related tourism activities for both wineries and rural destinations: first, they constitute a direct sales channel (Boatto, Galletto, Barisan, & Bianchin, 2013; Getz & Brown, 2006), providing the unique chance to create direct contact with the final consumers, and allowing to build and strengthen brand reputation (Winfree, McIntosh, & Nadreau, 2018), as well as to boost brand awareness (Castriota & Delmastro, 2015). Moreover, delivering successful wine tourism experiences fosters loyalty (Bruwer, 2002; Bruwer & Alant, 2009). Notably, the possibility of experiencing local products right in their place of origin delivers uniqueness and authenticity, fostering the creation of an emotional bond with the destination. Since authenticity is a crucial trigger of wine tourism demand, surpassing even wines quality (Dowling & Getz, 2006; Kim & Bonn, 2016), it follows that oeno-gastronomy constitutes a way to create place-attachment.

At a regional level, wine tourism is acknowledged as a tool for rural development (Montella, Cavicchi, Santini, & Rosen, 2017), creating employment, financial resources and promoting the valorisation of cultural and historical sites (Croce & Perri, 2010; Mauracher, Procidano, & Sacchi, 2016). Furthermore, as highlighted in the Georgia declaration on wine tourism, the phenomenon "has evolved into a key element for both emerging and mature tourism destinations in which tourists can experience the culture and lifestyle of destinations while fostering sustainable tourism development" (UNWTO, 2016). Consequently, wine tourism can nurture sustainable growth of the rural areas while encouraging the valorisation of the local culture and traditions in line with goal 12.b of the Agenda 2030. The latter is a 17-goals plan for sustainable development signed by 193 countries of the United Nations (UN) in 2015 and further approved by the general assembly of the United Nations Organization (ONU).

In the last decade, wine-motivated travels have grown considerably (Mauracher et al., 2016; Quadri-Felitti & Fiore, 2012), leading the beverage to gradually become a real "destination-ambassador" able to attract thousands of new tourists every year (Hall & Mitchell, 2004). Italy, France, and the USA are leading countries in wine tourism, which is why they have been

selected by the studies presented in the upcoming chapters of this thesis. In 2019, wine tourism attracted 15 million travellers recording a 9% increase on the previous year and generating a total turnover of 2.7 million Euros only in Italy (Associazione Nazionale Città del Vino, 2020; R. Garibaldi, 2020). The remarkable evolution of the industry further brought national authorities to give legal and fiscal recognition to wine tourism activities through the 2018 budget law, and to set, for the first time, guidelines and quality standards for the sector (DM n. 2779 12/03/2019).

France and the USA are no more petite, with 10 million travellers visiting French wine regions in 2016 [1]. Similarly, the USA hosts major international wine tourism destinations like Napa Valley and California (Getz & Brown, 2006; Jones, Singh, & Hsiung, 2015). In California, the regional total wine tourism expenditures in 2016 exceeded $1.1 billion (Stonebridge, 2016).

Academically, wine tourism studies boomed in the 2000s giving rise to a new line of research. The wine tourism literature generally distinguishes between traditional wine-producing countries like Italy and France, referred to as Old World, and more recent players of the wine sector like the USA and New Zealand, defined as New World countries.

Despite the phenomenon's importance to Old World wine producers, though, wine tourism research broadly refers to New World countries as the USA, Canada, New Zealand and Australia. Diversely, wine tourism in Old World wine-producing countries is a relatively recent and unexplored research topic (Alonso & O'Neill, 2009; Gómez, Pratt, & Molina, 2018). In their latest review on wine tourism from 1995 to 2014, Gómez et al. (2018) found that Old World accounts for 26.7% of all publications, 79% of which were published in the last ten years. The studies carried out in this research project contribute to filling this gap, enriching the currently limited body of literature on Old World wine tourism and providing strategic information to practitioners for meeting modern tourists' needs. Indeed, travellers are becoming increasingly experienced and sophisticated than in the past (Seeler, Lück, & Schänzel, 2019), and the sector is evolving with them.

If past research emphasised proximity to travellers' residence as a critical success factor in wine tourism (Getz & Brown, 2006), the phenomenon's growth led to the expansion of its demand. This expansion took place both qualitatively, attracting new and diversified market segments (Sigala & Robinson, 2019), and geographically, with wine regions becoming increasingly tied to international tourism flows. An example is Conegliano Valdobbiadene, the production area of Prosecco Superiore DOCG, where foreign tourists account for almost 46%

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[1] Atout France, 2016

of total visitors staying in the region (171,430 tourists in 2018), and 43% of tourism arrivals (67,205 in 2018) (Boatto, Pomarici, & Barisan, 2019).

In its turn, the profile of the wine tourists has expanded outside the niche of wine connoisseurs and wine lovers, including people who do not possess specific knowledge of wine and winemaking (Sigala & Robinson, 2019). Accordingly, modern wine tourists can be classified within the broader cluster of cultural tourists, i.e., educated travellers with a thirst for knowledge, seeking to experience local wine and food specialities in their place of origin as an expression of the area and its heritage (Croce & Perri, 2010, 2017). This transformative process led to re-think the concept of wine tourism as a mere instrument to sell wine, converting it into "an activity directly related to wine which provides a dynamic and versatile experience that integrates wine culture and heritage to create emotions, sensations, attachment and sensory impressions through the visit" (Santos, Ramos, Almeida, & Santos-Pavón, 2019, p. 683). Wine tourism evolution is also reflected in legal adjustments to national regulations. It recently happened with the Italian law, which now identifies wine tourism with any educational, cultural and recreational activity carried out in cellars and vineyards to know local wines and culture.

The rapid evolution underwent by the industry and the parallel market diversification call for up-to-date information on wine tourists' profiling and behaviour (Sigala & Robinson, 2019). This urge is also fuelled by the rising competitive pressure created by the growing number of practitioners and destinations entering the business, making it even more paramount to know the market to react proactively to its needs and ensure wine tourism practitioners' survival (Sigala & Robinson, 2019). The wine tourism studies collected in the present work answer this fundamental need providing an updated overview on both Old-World and New World wine tourists.

Although there is no stereotypical wine tourist (Alebaki & Iakovidou, 2011; Mauracher, Christine; Procidano, Isabella; Sacchi, 2013), a common trait of wine region visitors is a pre-existing degree of Involvement with wine (WI). Involvement is a complex yet paramount construct for understanding consumers' decision-making processes and behaviour (Broderick & Mueller, 1999; Dimanche, Havitz, & Howard, 2018). Several researchers have defined Involvement, which can be generally identified as "a state of interest, motivation or arousal" (Rothschild, 1984, p. 216).

Zaichkowsky (1985) made one of the first attempts to provide a standardised multi-item measure for the concept of Involvement, arguing that single-item tools could not account for involvement complexity fully. Mainly, the author distinguishes between three types of

Involvement, based on which area is affecting subjects' involvement level (Zaichkowsky, 1985):

- Personal Involvement: it is affected by a person's inherent interests, values or needs and motivates his/her regarding a product or service. In short, it represents the long-term personal relevance of an object (Lockshin & Spawton, 2001a; Ogbeide & Bruwer, 2013). It is also referred to as ego-involvement (Brown et al., 2007).
- Physical Involvement: depends on specific, differentiating attributes of a product or service that increase a person's interest.
- Situational Involvement: is a short-term change in the personal relevance and interest of a product or service resulting from context changes.

Another vital contribution to developing a tool for measuring WI is Laurent and Kapferer's scale for consumer involvement profile (CIP) (1985). The CIP was designed to provide a conservative, but reliable tool to capture the product (personal) involvement construct based on what the literature identifies as its main antecedents: perceived product importance; the perceived risk associated with purchasing the product; symbolic value of the product's purchase, and its hedonic value.

Given that wine and wine tourism fall under the category of hedonic products, the relevance of WI for understanding these products' consumption is not surprising. Indeed, hedonic products "consumption is primarily characterised by an affective and sensory experience of aesthetic or sensual pleasure, fantasy, and fun" (Dhar & Wertenbroch, 2000, p. 61). Therefore, its consumption relates to pleasure and enjoyment. According to the literature, hedonic products can create greater Involvement (Lesschaeve & Bruwer, 2010). Consequently, since its introduction in consumer research, wine involvement (WI) has rapidly become a key element in wine and wine tourism research (e.g., Brown, Havitz, & Getz, 2007; W. Lee & Kwon, 2021; L. Lockshin & Spawton, 2001a; Nella & Christou, 2014; Pagan et al., 2021).

Researchers argue that wine consumers can be divided into low Involvement and high Involvement based on their Involvement with the product. Low-involvement wine consumers drink wine occasionally and are less interested in the product itself. Diversely, highly involved consumers are frequent wine drinkers for whom wine is an integral part of their lifestyle (L. S. Lockshin, Spawton, & Macintosh, 1997; L. Lockshin & Spawton, 2001b). Additionally, they are also likely to need more time and information to choose which wine to buy (L. Lockshin, Quester, & Spawton, 2001) and to spend more on it (Charters & Pettigrew, 2006). Findings

further revealed that WI is a key trait of wine tourists' profile (Brown et al., 2007; W. Lee & Kwon, 2021; L. Lockshin & Spawton, 2001a; Nella & Christou, 2014). Specifically, WI can affect wine tourists' behaviour at different stages, impacting future behavioural intentions and post-visit attitudes (Nella & Christou, 2014; Sparks, 2007). Nevertheless, such wine tourism studies adopt different WI scales based on the previously described behavioural theories on Involvement.

An example can be found in Sparks (2007). The authors developed an 8-items scale to capture Involvement with food and wine activities based on Zaichkowsky's research (1985) and included it into an extended theory of planned behaviour (TPB) model to explore wine tourism behavioural intentions.

Similarly, Brown et al. (2007) conceptualised a 15-items tool starting from Laurent and Kapferer's consumer involvement profile scale (CIP) (1985): the wine involvement scale (WIS). Mainly, the scale captures ego-involvement with wine, which is personal involvement. Alike Sparks (2007), the authors argue that ego-involvement is the most relevant for wine tourism and leisure research as it plays a crucial role in motivating wine tourists. Tourism studies have widely applied the CIP scale (Brown et al., 2007), showing a general consistency of Laurent and Kapferer's tool among different international contexts (Gursoy & Gavcar, 2003). In light of these characteristics, the research presented in this work adopts the WIS tool instead of other wine involvement scales. Expressly, chapter 2, 3 and 4 include the WIS tool as an antecedent of intention to visit a wine region, a topic on which there is a lack of knowledge and an urge for further investigations (Sigala & Robinson, 2019; Vo Thanh & Kirova, 2018)

Nevertheless, the advent of the Covid-19 pandemic has exposed the world to profound changes on many levels. The most substantial modifications are connected to the recurrent government-imposed lockdowns and mobility restrictions to stop the rapid diffusion of the virus. The introduction of these "physical barriers" has affected, at the macro level, international trade and tourism flow, both domestic and from other countries. At the same time, they jeopardised many firms' survival and consumers' known normality at the micro-level.

One of the consequences of the new pandemic daily life at a consumer level is indeed the disruption of former habits and lifestyles, which generated severe psychological discomforts (Arpaci, Karataş, & Baloğlu, 2020; Colbert, Wilkinson, Thornton, & Richmond, 2020). As previously stated, wine is an essential component of Italian culture and lifestyle (Seghieri, Torrisi, and Casini, 2007). Consequently, its consumption can be considered a habit, i.e. a context-dependent behavioural disposition of an individual to repeat a given activity when triggered by specific circumstances (Wood, Tam, & Witt, 2005). Notably, particular

circumstances related to wine drinking are social occasions and meals (ISTAT, 2020): consumption occasions that were jeopardised by the lockdown and social distancing measures. Consequently, though wine and other alcoholic beverages were still accessible, wine consumption and purchase patterns were inevitably affected with potential effects on future wine demand, thus on the role of wine in Italian culture and lifestyle. Chapter 1 addresses this issue by exploring factors that triggered modifications of wine consumers' behaviour during the first lockdown in Italy, and the emergence of new consumption habits like online purchasing, trying to assess whether such factors can have long term effects on the wine demand.

The tourism sector itself is highly vulnerable to threats of different nature like political, health, or socio-economic crises (Novelli, Gussing Burgess, Jones, & Ritchie, 2018). The scale of an unprecedented event as the Covid-19 has deeply compromised the equilibrium of the industry (Chinazzi et al., 2020), inducing profound structural changes that will impact its dynamics in the long run (Sigala, 2020). United Nations World Tourism Organization (UNWTO) declarations reveal that no country has escaped the dramatic economic consequences of the pandemic, the extent of which is three times higher than the one caused by the 2009 financial crisis (UNWTO, 2020). Specifically, all countries recorded severe drops in international tourism arrivals (-56% in the first six months of 2020), with a domino effect on tourism-related exports and job places (UNWTO, 2020). The estimated expected loss in international tourism receipts and exports varies from 910 billion to 1.2 trillion US$, causing a 1.5-2.8% decrease in the world GDP. As a result, Covid-19 represents one of the tourism sector's major crises jointly with the Severe Acute Respiratory Syndrome (SARS) (Ying, Wang, Liu, Wen, & Goh, 2020). wine tourism suffered the same fate since, as previously described in this chapter, the sector has been growingly attracting and relying on international tourist flows. Moreover, the negative impact of Covid-19 on the occupancy rate has affected the financial situation of many families, thus creating economic constraints to travelling.

Even when physical barriers were relieved, another critical aspect affecting (wine) tourists' behaviour is the fear of infection. As the virus was spreading, people were constantly exposed to news on deaths related to Covid-19, the severity of the Sars-Cov2 illness, and the uncertainty around potential cures or vaccines, leading to an increasing state of fear and anxiety (Arpaci et al., 2020). Moreover, Covid-19 is an airborne virus and, while travelling, people engage with tens if not hundreds of other potentially infected tourists. Consequently, travel can fuel these negative emotions inhibiting people from engaging in this activity. In this respect, Arpaci et al. (2020) have recently produced and validated an empirical tool, the Covid-19 phobia scale (C19P-S), which embodies both Covid-related fear and anxiety. Notably, the

original C19P-S scale includes four dimensions – economic, psycho-somatic, social, and psychological – and is designed for diagnostical purposes.

In this scenario, rural areas may have suffered Covid-19 barriers less than city destinations as they are perceived as safer in case of shock (Park, Kim, Kim, Lee, & Giroux, 2021; Song, Qiu, & Park, 2019). Furthermore, proximity with the place of residence may have favoured wine tourism resilience in line with past literature, identifying it as a crucial driver for the sector (Getz & Brown, 2006). As a result, Covid-19 and the fear of infection may encourage people to visit wine regions rather than the opposite. In exploring the antecedents of wine tourism intentions, chapters 2 and 3 embody the impact of fear and anxiety related to the novel Covid-19 virus on wine tourism intentions in the most relevant wine tourism basins – France, Italy, and the USA. The studies use an adapted version of Arpaci et al.'s scale to reach this goal while embodying other economic constraints created by the pandemic.

Covid-related fear and anxiety and the life-threatening nature of the Sars-Cov2 illness lead to consider another important aspect: risk attitude. As mentioned above, travelling may expose people to higher risks of infection due to uncontrolled contact with many potentially ill individuals. According to the behavioural literature on risk, this issue may induce people to evaluate perceived losses and gains connected to the decision to travel and to consequently adjust their risk-taking behaviour (Sarin & Weber, 1993) based on individual characteristics and on their willingness to take risks – i.e. on their risk attitude (Hillson & Murray-Webster, 2007). Given the extent of the potential losses in times of pandemic, risk attitude can play a crucial role in shaping the intention to travel to a wine region and, consequently, tourists' behaviour. Coherently, recent tourism research brought attention to the negative impact of risk perception (Villacé-Molinero, Fernández-Muñoz, Orea-Giner, & Fuentes-Moraleda, 2021) and risk aversion (Luo & Lam, 2020) on travel intentions, which can be fuelled by feelings of fear and anxiety connected to the pandemic (Luo & Lam, 2020). This focus is addressed by chapter 3, adopting the travel risk attitude scale from Zhu & Deng (2020) to explore the impact of covid phobia and risk attitude on the travel intentions of US wine tourists.

On a different note, the pandemic potentially produced positive effects.

First, the severe socio-economic difficulties caused by Covid-19 have potentially led people to become more sympathetic towards national firms' struggles and, more generally, to society's problems. As a result, the pandemic may have fostered nationalism and solidarity feelings (Cappelen, Falch, Sørensen, & Tungodden, 2021; Guterres, 2020) following the moral dilemmas triggered by the shock (Cappelen et al., 2021). Coherently, Covid-19 induced

reevaluation of past behaviour and personal priorities (Sigala, 2020). The combination of all these factors produced several possible consequences for the actors of the wine sector.

To start, consumers may preferer locally produced wines over imported ones in the view of prioritising the national economy's recovery over that of other countries. Such willingness to support winemakers operating in the same nation or area of residence may have also induced wine drinkers to purchase extra bottles of wine, thus changing their wine consumption frequency. In the same spirit, solidarity and nationalism have possibly encouraged trips to wine regions and wine tourism activities to support local producers and rural businesses. Coherently, existing pre-Covid literature stresses that consumers associate direct sales of locally produced agri-food products with sustainable rural development support (Delgadillo, Reyes, & Baumgartner, 2021; Giampietri, Koemle, Yu, & Finco, 2016). The studies presented in Chapters 1 and 2 analyse the impact of willingness to support national wine producers on Italians wine consumption frequency and as a driver of wine tourism intentions among Italian and French wine tourists, respectively.

Another benefit brought by the pandemic is that it gave people additional free time to engage, among others, in leisure activities (Gammon & Ramshaw, 2020) such as cooking and baking. During home confinement and in times of restrictions, many of these leisure activities have been conveyed by technology (Gammon & Ramshaw, 2020), leading to increased use of social media and online shopping (UNCTAD, 2020). Wineries have adapted to the new normality transformed by Covid-19 by increasing their presence on social media, implementing or improving online sales channels, and moving wine tourism experiences online thanks to video conferencing platforms such as Zoom. The literature evidenced that an underlying interest in wine drives wine tourism (Brown et al., 2007; Nella & Christou, 2014), which is defined as the degree of enjoyment a subject gets from engaging in specific activities (Hong, Hwang, Liu, Ho, & Chen, 2014). In its turn, interest in dedicating time to wine activities depends on the underlying personal Involvement of the subject with the product, which appears to be a key wine tourism antecedent. Therefore, wine tourists are likely to commit part of their free time to wine-related activities while being pushed by their degree of Involvement with wine. Subsequently, the pandemic may have fostered situational Involvement with wine by reinforcing wine tourists' interest in the product. The studies proposed by chapters 2 and 3 analyse the positive effects of home confinement in creating situational Involvement by capturing acquired interest in wine during the lockdown while considering the key antecedent of wine tourism: personal Involvement with wine.

The simultaneous modelling of positive drivers (i.e., personal and situational Involvement) and constraints (Covid phobia, economic constraints) adopted by the two studies allows them to provide an all-encompassing vision of the phenomenon, the freest of marketing myopias as possible. As pointed out by Cho et al. (2014), negative factors can shape travel decisions and intentions even more than positive ones: a remark that becomes vital in the context of the pandemic.

However, the previously mentioned vulnerability of the tourism industry has pushed firms overtime to devise strategies able to strengthen their resilience to shocks, which can hence trigger innovation and transformative changes (Sigala, 2020). In this respect, technology plays a crucial role in catalysing such innovation and enabling practitioners to build their resilience to crises (C. Hall, Prayag, & Amore, 2017): a position undoubtedly enhanced by the pandemic the connected restrictions.

The phenomenon of online wine tastings (OWTs) is a striking example of how wine tourism operators adapted to the new normality imposed by Covid-19 through technology-based resilience strategies. Liz Tatch (2021) defined OWTs as wine tastings provided through interactive software such as Zoom, allowing customers to purchase a wine tasting box and have it home-delivered to join a guided tasting experience from the comfort of their homes. Such experiences are differentiated based on the level of technology adopted (e.g., basic video-call tastings, advanced virtual wine experiences; Tatch, 2021), based on the size of the group involved in the tasting (e.g., large groups tastings, private tasting experiences), and on the target user (Szolnoki, Lueke, Tafel, & Blass, 2021). Indeed, online wine tastings held by wineries worldwide since the beginning of the pandemic are both business-to-consumer (B2C) and business-to-business B2B (Szolnoki et al., 2021). B2B online tastings permitted new market opportunities, notwithstanding the cancellation of many international exhibitions. Still, with a critical advantage: while, during international exhibitions, producers have to share buyers' attention with other competitors, OWTs allow one-to-one meetings. Diversely, B2C online wine tastings mainly constitute a tool to retain existing consumers, foster loyalty, and attract new ones. Besides being a tool for wineries, OWTs are increasingly adopted by wine consortia and organisations, like the Consorzio Conegliano Valdobbiadene Prosecco Superiore DOCG or the German Wine Institute, as a tool for territorial marketing. On the consumer side, Covid-19 fuelled the diffusion of this tool, leading consumers to become more familiar with online platforms (Alaimo, Fiore, & Galati, 2020).

The phenomenon is gaining attention also among academics (e.g., Paluch & Wittkop, 2021; Wen & Leung, 2021; Torrico et al., 2021). Recently, Szolnoki et al. (2021) analysed the supply

for OWTs involving over 1000 wineries in 40 different countries, highlighting the profitability of such experiences and arguing that online wine tastings (OWTs) are here to stay.

While research on the topic is still at its nascent stage, the diffusion of the phenomenon calls for information on the characteristics of its demand and the drivers of OWTs consumer behaviour. This information is vital to guide practitioners and destination management operators (DMOs) in designing and implementing such marketing tools. Chapters 4 and 5 answer this need by providing an exploratory analysis of the drivers of interest for online wine tourism experiences and, for the first time in wine tourism literature, an overview of preferences and market segments of the Italian online wine tastings demand. To offer a comprehensive view of the phenomenon, chapter 4 embodies context-related drivers such as Covid phobia jointly with important wine tourism antecedents like willingness to support local wineries and personal Involvement with wine.

The following paragraphs present a general description of the primary methodologies adopted in this work, i.e. structural equation modelling (SEM) and discrete choice experiment (CE), to better understand their functioning and characteristics. The logistic regression model, instead, is discussed in Chapter 1.

Methodology

Structural equation modelling

Structural equation modelling (SEM) is a widely applied statistical technique in many fields of study dealing with human-based data, like consumer behaviour studies, and tourism research is no exception (Afonso, Silva, Gonçalves, & Duarte, 2005; Fountain, Charters, & Cogan-Marie, 2020; Zatori, Smith, & Puczko, 2018). The main advantage of this methodology over other multivariate techniques is that SEM allows path modelling and the simultaneous estimation of measurements through multiple equations. Differently from similar methods such as Partial Least Square (PLS), though, SEM estimation accounts for error variance. This represents a considerable advantage for behavioural studies, where complex theoretical concepts (such as the fear of the novel Coronavirus) cannot be measured directly through a single item and are captured by multi-item latent constructs (Hair et al., 2019). Specifically, SEM allows researchers to include such complex latent constructs in the model as endogenous variables and estimate them from a set of items representing the construct while accounting for the related measurement error and correcting it.

This is why SEM can provide higher robustness for elaborations made on data collected from human individuals, which are often not normally distributed (Baggio & Klobas, 2017). Moreover, it allows answering multiple research questions with a single analysis to simultaneously model the relationship between several dependent and independent variables (Joseph F. Hair, Black, Babin, & Anderson, 2019).

There are two types of SEM: covariance-based (CB-SEM) and partial-least-square (PLS-SEM).

CB-SEM is the most widely applied type of SEM in behavioural research, and it is often used to test existing or new theories. CB-SEM is a parametric technique, so the main estimation procedure is the maximum likelihood (ML) based on the covariance matrix. Specifically, the CB-SEM algorithm minimises the difference between the covariance matrix of the observed and the estimated model. Moreover, being a covariance-based technique implies that the presence of a causal relationship between two variables can only be verified if a systematic covariance exists between them (Hair et al., 2019). Nevertheless, this technique comes with some criticalities: first, it requires a large sample size, and secondly, it assumes multivariate normality is present (Joseph F. Hair et al., 2019; Kline, 2015). Regarding sample size, a general rule of thumb suggests the minimum sample should include 10 observations for each parameter estimated in the model (Hair et al., 2019). Therefore, more complex models require a greater sample size to minimise sampling error and produce reliable estimates.

As for multivariate normality, it is a fundamental assumption of CB-SEM, but it may be challenging to assess (Joseph F. Hair et al., 2019; Kline, 2015). Indeed, this assumption implies the normality of individual univariate distributions, bivariate normality between couples of variables, bivariate scatterplots, and homoscedasticity (Kline, 2015). Although several tests exist to test for multivariate normality, such as Mardia's coefficient, they often deliver significant results in large samples (Kline, 2015). An alternative way to assess multivariate normality is by inspecting univariate distributions (Kline, 2015), even though issues related to the violation of this assumption can be minimised through an adequate sample size and by applying the bootstrapping procedure (Hair et al., 2019).

Diversely, PLS-SEM is a non-parametric, variance-based technique. PLS-SEM is less common than CB-SEM, particularly in the hospitality management sector (Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2018). Generally, the application of PLS-SEM is forecast oriented, but it is being increasingly applied also to theory testing (J F Hair et al., 2020). Differently from maximum likelihood in CB-SEM, its algorithm operates to maximise the variance explained of the endogenous latent constructs included in the model, i.e., their R^2. Since its application is

more recent, best practices for model evaluation are still being defined (J F Hair et al., 2020). Ali et al. (2018) have recently tried to fill this gap by providing guidelines for critical PLS-SEM application based on a review of existing literature. Nevertheless, this approach comes with many attractive advantages for researchers, such as the capability to provide robust estimates with small samples (J F Hair et al., 2020) and the relaxation of the multivariate normality assumption, which is often challenging to meet with human-based data.

The studies included in this thesis apply both SEM methods using SPSS AMOS 13 for CB-SEM analysis, while SmartPLS software is used for PLS-SEM.

Whatever the approach adopted, SEM requires two steps: a confirmatory factor analysis (CFA) on the measurement model (MM) and the estimation of relationships among constructs, i.e., of the structural model (SM). CFA is the first step, and it allows to verify the goodness and the reliability of the constructs included in the structural model (SM). Commonly, the key aspects to consider in CFA are construct reliability, convergent validity, and discriminant validity. The key indicators and their thresholds considered for CFA in the two SEM methodologies are summarised in Table 3.

Table 3 Indices and thresholds for CFA and measurement model (MM) evaluation in CB-SEM and PLS-SEM

	CB-SEM	PLS-SEM
Indicator reliability	Standardized Indicator Loadings > .40 acceptable Standardised Indicator Loadings ≥ .70 good	Standardised Indicator Loadings ≥ .7
Construct reliability	Construct reliability > .70	Cronbach's alpha > .80
Convergent Validity	Average Variance Extracted (AVE) ≥ .50	Average Variance Extracted (AVE) ≥ .50

Discriminant Validity	SQRT of Average Variance Extracted (AVE) should exceed inter-construct correlation	Heterotrait-Monotrait Ratio (HTMT):
		  Conceptually different constructs < .85
		  Conceptually similar constructs < .90
		
		C.I.s of HTMT statistics do not include 1.
		
		Cross-Loadings: Item loadings on the corresponding construct must be greater than their loadings on other constructs

Source: author own elaboration based on Hair et al., 2020; Hair et al., 2019; Ali et al., 2018.

Additionally, all indicators' weights (also defined outer loadings) must be significant (95% C.I.) to assess their reliability, and therefore the validity of the measurement model in PLS-SEM.

While in PLS-SEM analysis SM and MM estimations are performed simultaneously, in CB-SEM the evaluation of the measurement model is performed separately.

This implies that in CB-SEM, the goodness-of-fit (GOF) must be evaluated for both the MM and SM using a specific set of indices. Mainly, Root Mean Square Error of Approximation (RMSEA) and Standardised Root Mean Residual (SRMR) are commonly considered for absolute fit. Tucker Lewis Index (TLI) and Comparative Fit Index (CFI) are reported for incremental fit. (Hair et al., 2019) Thresholds for GOF indices are different based on sample size (n) and the number of observed variables in the model (m), according to Hair et al.'s guidelines (Hair et al., 2019).

The mediation effect can be analysed in both SEM techniques through bootstrapping with bias-corrected confidence intervals. All the SEM studies presented in the following chapters are performed with bootstrapping, setting the number of repetitions to 10000 and the confidence level at 95%. As mentioned above, applying the bootstrapping procedure in CB-SEM is also a common way to handle non-normality in the dataset (Byrne, 2016), which is necessary due to the parametric nature of the analysis.

In PLS-SEM, research on the most effective GOF indices is still ongoing. Nevertheless, the literature reports two primary measures to evaluate the model's adaptation capability: SRMR, which should be ideally lower than .80 (Hu & Bentler, 1998), and $RMS_{theta,}$ which represents the square root of the average residual covariance. Recent guidelines suggest that RMS_{theta} values below .12 indicate a good fit (Henseler et al., 2014).

Additionally, the following indices are used for the evaluation of the results: R^2 (must be > .25 for target constructs); effect size f^2 (values of .02, .15 and .35 denote weak, moderate, and strong effects); out-of-sample predictive relevance Q^2, estimated through blindfolding (reference values are the same as for f^2) (Hair et al., 2020). Specifically, effect size f^2 represents the extent to which the presence in the model of a given construct affects the R^2 of other endogenous constructs. Instead, out-of-sample predictive relevance reflects the model's capability to predict data from different samples than the one used for the estimation: if Q^2 of a latent construct is greater than 0, there is empirical evidence of the SM predictive relevance of for that construct (Hair et al., 2020).

Choice experiment and latent class analysis

The following paragraph discusses the methodological approach adopted in chapter 5. Choice experiment (CE) is a widely applied methodology in consumer research. To date, several studies adopted CE to explore both products (such as apples, cars, etc.) and services, including a number of tourism studies (e.g. Chaminuka, Groeneveld, Selomane, & van Ierland, 2012; Lee & Yoo, 2015; Wehrli et al., 2017).

The main characteristic of CE lays in the possibility to elicit respondents' preferences for a product. In real life, the same product is present on the market in several versions having a specific combination of attributes levels. In CE, such different product versions are referred to as *alternatives*. The CE methodology assumes that consumers will choose the product alternative able to maximises their utility (Giampietri, Koemle, Yu, & Finco, 2016). Indeed, CE is rooted in McFadden's random utility function (1794) according to which the utility deriving from choosing a given product alternative *j* (U_j) results from a combination of the utility gained from observable product characteristics V_j, and of the utility coming from unobservable factors (ε_j). Precisely, the Utility function U_j is represented as follows (1):

$$U_j = V_j + \varepsilon_J = \mu \beta X_j + \varepsilon_J \quad (1)$$

With V_j representing the structural utility of alternative *j*, μ being the scale factor of utilities, β being the vector of the parameter values of the attributes of option *j*, X_j being the vector of the attribute of option *j*. Therefore, utility represents the analytical tool to estimate consumers' preferences (Giampietri et al., 2016).

Moreover, consumer *n* choosing the product alternative *j* implies that alternative *j*'s utility is greater than that of other product alternatives *i* available (2).

$$P_{ni} = Prob\big(V_{nj} + \varepsilon_{nj} > V_{ni} + \varepsilon_{ni}\big) \forall j \neq i \quad (2)$$

To estimate choice probabilities, the present study applies multinomial logistic regression (ML) and alternative-specific mixed logit model (MIXL), also referred to as mixed multinomial logit model (Mcfadden & Train, 2000) or random parameter logit (Cameron & Trivedi, 2005).

Multinomial logistic regression (ML) allows calculating the average probability of choosing a product alternative i within the whole population, assuming the error term follows an extreme value type 1 distribution and is independently and identically distributed (IID) (Train, 2009).

In ML, probabilities are calculated as follows (3):

$$P\,(y_i = 1) = \frac{\exp\,(V_i)}{\sum_{j=1}^{J} \exp\,(V_i)} \quad (3)$$

MIXL is an extension of multinomial logit models but provides greater flexibility. Indeed, MIXL can account for potential correlation among repeated choices, using random coefficients to model choices correlation across alternatives (Shen, 2010). It also "allows unrestricted substitution patterns and correlation in unobserved factors over time". (Train, 2009, p. 53). Moreover, variable distribution can take several forms other than the normal distribution (e.g., triangular) (Train, 2009). In MIXL, choice probabilities are estimated as the integral of regular logit probabilities weighted over the density of parameters (Train, 2009). They are indeed expressed as (4):

$$P_{ni} = \int L_{ni}(\beta) \, f(\beta) \, d(\beta) \quad (4)$$

Specifically, L_{ni} is the logit probability of consumer n choosing product alternative i, and it is calculated as (5):

$$L_{ni} = \frac{e^{V_{ni}(\beta)}}{\sum_{j=1}^{J} e^{V_{ni}(\beta)}} \quad (5)$$

In this formula, V_{ni} represents the portion of utility depending on β parameters. When utility is linear in β parameters, $V_{ni}(\beta) = \beta' d\,\beta$, and mixed logit probabilities are (6):

$$P_{ni} = \int \frac{e^{\beta' x_{ni}}}{\sum_{j} e^{\beta' x_{ni}}} \, f(\beta) \, d(\beta) \quad (6)$$

The present research estimates ML and MIXL in STATA 17. When utility is not linear in beta and beta assumes a finite set of values, the MIXL becomes a Latent Class model (LC) (Train, 2009). LC models describe choices heterogeneity, which arises because not all consumers have the same needs. Therefore, the purchase choice maximising their utility may differ from one another's. Such heterogeneity can be explained by factors varying across individuals (for example, age and income), identifying specific segments in the population within which choices heterogeneity is minimised. The LC model is also estimated in STATA 17 through the expectation-maximisation (EM) algorithm, or latent class logit model (Pacifico & Il Yoo, 2013). LC analysis provides critical information on the demand segments for online wine tourism experiences and their characterisation, which is currently unexplored.

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Chapter 1 – Drinking Covid-19 away: wine consumption during the first lockdown in Italy[2]

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Abstract

In Italy, wine is an integral part of most people's habits and lifestyles. The advent of a traumatic event like the Covid pandemic brought profound changes to people's lives: economic instability and normality disruption led consumers to revise their priorities and modify their consumption and purchase behaviour. This study analyses the impact of socio-demographic, psychological, and context-related modifications induced by the pandemic on wine consumption and purchase patterns. Participants completed an online, structured survey, and Italian wine consumers constitute the sample. Logistic regression and descriptive techniques are applied to analyse data. Results highlight that wine consumption is a deeply rooted habit among Italian consumers, which resisted the significant context modifications that occurred with the pandemic. Moreover, changes in wine consumption are connected to that of other alcoholic beverages. Significant short-term and potential long-term effects are discussed. Information collected is paramount to understanding wine consumers' reactions and behavioural changes induced by the pandemic and effectively planning marketing strategies during new infection peaks.

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1. Introduction

The Covid-19 pandemic is a traumatic event that led to significant changes in people's lives, and Italy is among the hardest-hit European countries (Ministero Della Salute, 2021). The rapid and insidious spread of the virus, causing a severe and potentially life-threatening respiratory disease, forced the national Government to take a drastic step by forcing the country into a first, extended lockdown from March 10th to May 4th, 2020. This period had a profound impact on two significant aspects of the national community: the economy and productivity due to the forced shutdown of most activities and mobility and social occasions through the prohibition of physical gatherings and trips both outside and within the region. The disruption of people's habits and lifestyles generated severe psychological discomforts (Colbert, Wilkinson, Thornton, & Richmond, 2020, Arpaci, Karataş & Baloğlu, 2020).

The food-and-beverage industry and retail trade were among the few activities allowed to operate by the national law, so access to wine and other alcoholic beverages was still available. Although wine is an essential component of Italian culture and lifestyle (Seghieri, Torrisi, & Casini, 2007), the lockdown profoundly transformed wine consumers' routines, leading to potential modifications in wine consumption patterns. Such changes can potentially affect future wine demand, thus the role of wine in Italian culture and lifestyle. Considering the unprecedented circumstances of uncertainty faced by the wine industry, there is a need for reliable information on the impact of the lockdown on wine consumption.

This study aims at responding to this need, identifying factors that triggered modifications of wine consumers' behaviour during the first national lockdown. The effect of new consumption habits such as online purchasing is also explored to provide insights into whether such factors can affect demand in the long term. An online survey was conducted on a large sample of Italian consumers of wine and alcoholic beverages (beer and spirits) to achieve these goals. A descriptive analysis is undertaken to highlight significant changes in alcoholic beverage consumption during the lockdown, focusing on both wine and substitution effects among wine, beer and spirits. Finally, factors inducing positive and negative modifications of wine consumption frequency are identified.

2. Theoretical background

The Covid pandemic is a one-of-a-kind, extraordinary event. Although world economies have already experienced health emergencies due to virus outbreaks such as SARS, the Covid pandemic crisis is unprecedented due to the multi-level and interdependent changes it has induced on a global scale. Consequently, to the best of the authors' knowledge, no similar phenomena in nature and magnitude have been analysed in the existing literature on consumer behaviour. Nevertheless, researchers extensively explored the effect of habit disruption and stress on both wine and alcoholic beverages consumption. The following sections present a state of the art on these two key aspects, identifiable as significant consequences of the pandemic on consumers' lifestyles. Additionally, the role of wine and wine consumption in Italy is discussed.

wine and alcohol consumption in Italy

Italy is among the major players in the wine market, with production exceeding 50 million hl/year (OIV, 2020) and being the third world wine consumer after the USA and France. The Italian population consumes over 20 million hectolitres a year (22.4 in 2018), corresponding to 35 litres per capita (OIV, 2020). The latter has considerably shrunk in the last decades (Sellers & Alampi-Sottini, 2016). Still, its decrease is primarily due to changes in how wine is consumed rather than a switch of consumer preferences towards other alcoholic beverages. The function of wine has indeed gradually switched from nutrition to pleasure (Hertzberg & Malorgio, 2008), leading the share of daily wine consumers to decrease (17.6% of the population) in favour of non-daily ones, which are growing (36.6% of the population) (ISTAT, 2020). Generally, older generations tend to drink more wine and more often than younger ones (ISTAT, 2020), and contemporary daily wine consumers are likely to be males rather than females (25.9%; ISTAT, 2020). Females, indeed, are generally less prone to alcohol drinking. Compared to other alcoholic beverages such as beer and spirits, wine consumption is more rooted in the Italian population's habits: indeed, only 5.3% and 0.6% of consumers, respectively, are daily beer and spirits drinkers (ISTAT, 2020). The widely diffused habit of having wine during meals could explain making food and gatherings with family members important consumption motivations in the Italian scenario. Social relations also represent a relevant consumption motivation, mainly due to the habit of the pre-meal *aperitivo,* when the wine is consumed either by the glass or mixed in cocktails. Almost 40% of the Italian population usually drink alcoholic *aperitivo* (ISTAT, 2020).

Finally, health has been thoroughly explored as a factor influencing alcohol drinking behaviour. Generally, alcohol consumption can be considered a potential threat because of the poisonous effect of alcohol overconsumption and the related health risks or an unhealthy dietary choice, increasing the caloric intake while providing low nutritional value (Bazzani et al., 2020). In this respect, the new post-pandemic lifestyle could prompt a recalibration of priorities (Sigala, 2020), leading people to re-evaluate the outcomes of their behaviours (Wood, Tam, & Witt, 2005). Therefore, the pandemic may constitute a deterrent to alcohol consumption, as human health and survival are at stake.

As regards to wine, though, past research highlights the potential beneficial effects of moderate wine consumption on human health, mostly related to antioxidants in red-coloured berries (e.g., Nijveldt et al., 2001; De Lorimier, 2000). The Mediterranean diet can potentially improve such effects. In this sense, wine can be seen as a healthy dietary choice (Fiore, Alaimo, & Chkhartishvil, 2019).

On a broader scale, a moderate wine intake can also contribute to hedonistic health and well-being (Fiore et al., 2019), which is associated with focusing on the self and the present moment (Huta, 2015), favouring sociability and inducing a stress-free mood (Cooper, 1994). The unprecedented circumstances of the lockdown and the uncertainty generated by the pandemic may have emphasised the role of wine drinking in emotional and mental well-being, positively impacting its consumption frequency.

Psychological difficulties and alcohol consumption behaviour

As mentioned above, the Covid-19 pandemic constituted a source of stress and anxiety that have long been associated with increased alcohol consumption. Among the first theories, Horton's Tension-reduction hypothesis (1943) identifies alcohol consumption as a way to diminish the feeling of anxiety prompted by stress, which arises either from traumatic events or from environmental stressors. Later studies further explored this connection, specifying that alcoholic beverages consumption can be a way to mitigate negative feelings (Powers & Kutash, 1985). Stress, moreover, may increase alcohol intake when the intention to drink is already present (Dawson, Grant, Stinson, & Zhou, 2005). In this respect, a stronger association exists with being male (Dawson et al., 2005), explained by gender-related stress resistance. Indeed, men and women tend to react differently to stress and single stressors, intended as factors inducing stress (APA, 2012). Older people tend to deal better with negative emotions when subject to stressors, which is an indicator of stress resilience (Ong et al., 2006), while mainly endorsing positive feelings (Scott et al., 2014). Nevertheless, it should be considered that

ageing is associated with increased emotional complexity connected to the awareness of "running of time" (Carstensen et al., 2000). Such complexity peaks at middle age (Labouvie-Vief et al., 2007).

In the context of this research, we expect the fear of the SARS-CoV-2 illness, jointly with economic uncertainty and isolation, to trigger an increase in wine and, more generally, in alcohol consumption frequency, especially in males and middle-aged people. Indeed, other researchers have already outlined the high risk of potential alcohol overconsumption prompted by the pandemic's emergence (e.g., Clay & Parker, 2020).

Disrupting (wine) habits

Habits are defined as behavioural dispositions to repeat a set of everyday activities when specific circumstances occur (Wood et al., 2005). As an individual repeats the behaviour, triggering factors – e.g., performance time, location, or people the activity is usually shared with – are associated in the memory with specific activities, leading to a set of cognitive, neurological, and motivational changes. Habits, indeed, tend to be context-dependent (Wood et al., 2005). Consequently, habitual actions lose their explicit instrumental nature, separating them from intentions (Neal, Wood, & Quinn, 2006; Wood et al., 2005) and performing almost unconsciously. Regarding wine, its recurrent consumption in Italy is strongly connected with a multitude of attitudes, behaviours, and consumption situations (Presenza, Minguzzi, & Petrillo, 2010), mainly conviviality, e.g., the *aperitivo* or gatherings with friends, colleagues, family and dining out. In this sense, wine drinking can be considered a habit for a large slice of the population. With the closure of restaurants, cafes and the ban of social gatherings during the lockdown, most factors driving wine consumption habits disappeared, inducing changes in most wine consumers' drinking habits. People who usually drink wine on social occasions may reduce their consumption frequency. At the same time, consumers who consume wine alone are expected either to keep their consumption-frequency stable or to increase it. The direction of this change may differ based on the strength of the role of wine in one's habits. The literature highlights that stronger habits tend to survive context changes as intentions may come into play, creating the conditions to preserve them (Wood et al., 2005). Given the strength of the habit of *aperitivo* in Italy, people may look for alternative ways to pursue this activity during the lockdown: the virtual *aperitivo*.

To sum up, the strength of wine consumption as a habit among the Italian population before the pandemic leads to assuming that intentions arose to preserve this, despite the drastic context

changes. In this respect, physical barriers imposed with the national lockdown may prompt the emergence of new ways to maintain usual wine consumption habits.

Conversely, the lockdown may show disrupting effects on wine drinking, resulting in either in reduced consumption or substitution effects.

3. Materials and methods

A structured questionnaire was developed focusing primarily on wine while incorporating information on the consumption of other alcoholic beverages. The survey includes seven sections: consumption and purchase patterns before and after the pandemic (for wine, beer, and spirits), wine consumption context pre- and post-Covid, online wine-related interactions, psychological difficulties (i.e., feeling of isolation, fear of the virus and the economic crisis), positive feelings (i.e., willingness to support local wine producers, possibility to refocus on the self while in lockdown) and socio-demographics. Specifically, wine, beer and spirits consumption patterns before the pandemic refer to both at-home and outdoor consumption. Isolation is expressed as a latent construct focusing on relational connectedness. Indeed, relational connectedness represents social loneliness, one of the most significant consequences of the lockdown. For this purpose, a 3-items scale based on Hawkley et al.'s (2005) loneliness scale (UCLA scale) was adopted. The 3 items were reduced to a single factor (α=.87; KMO=.72) and the resulting Isolation scale is inverted (1=strong isolation; 5= weak isolation). The three items used are "*since the beginning of the lockdown, there are people I feel close to*", "*since the beginning of the lockdown, there are people I can talk to*", and "*since the beginning of the lockdown, there are people I can turn to*". Fear of Covid-19 was captured by the statement "*I feel vulnerable to Covid-19 outbreak*", while fear of the economic crisis is captured by the statement "*I am concerned about the economic impacts of the crisis on myself and my family*". Two statements represented positive feelings: "*quarantine has allowed me to focus on the essentials*", and "*since the quarantine has begun, I feel like I should buy more local wine to support my country's economy*".

All items were measured by 7-points likert scales (1= strongly disagree; 7=strongly agree).

Online data collection was carried out between April 16th and April 29th, 2020 – i.e., during the first lockdown in Italy. As previously mentioned, given the impossibility of reaching the population of interest – consumers of alcoholic beverages – due to the ongoing pandemic and the short time window available, snowball sampling was adopted. This technique represents an

efficient and cost-effective data collection method in contexts where subjects of interest are challenging to reach (Ghaljaie, Naderifar and Goli, 2017). Data have been collected according to the guidelines provided by the Declaration of Helsinki (WMA General Assembly, 2013). Drawbacks reported in the literature connected to this sampling technique, primarily due to its convenience nature, can be compensated by large sample size. The survey was diffused through social networks and via direct contacts. The original study, designed in collaboration with the European Associations of Wine Economists (EuAWE) research group, involved several big players in the wine sector – i.e., Spain, Italy, Portugal and France. The current analysis refers exclusively to the Italian sample, with 1076 valid questionnaires collected. Table 1 summarises the descriptive statistics of the sample. The majority of interviewees (57.8%) are males employed in the service sector (57.4%) and with either good (50.1%) or sufficient (36.2%) economic situation. Almost half of the sample live in an urban context, while 30% come from suburban residential areas. A minor share of respondents lives alone, with an average household size of three adults (45.7%) and no children living in the same household (68.4%). Almost all age groups are homogeneously represented, with a slight predominance of 41–50-year-old subjects. The over 70s age class was poorly represented, probably due to the sampling technique adopted, and was aggregated into the 60-70 age group. Similarly, for wine consumption frequency before the lockdown (WCONS_B), respondents drinking wine once a month or less were aggregated into one category of occasional consumers.

Given the categorical nature of the dependent variables (DV) and the use of human-sourced data, data analysis relied on descriptive techniques and binary logistic regression (LR). This statistical approach was chosen because it provides higher robustness when multivariate normality assumptions and equal variance-covariance matrices across groups are not met, which is common in social science research (Hair et al., 2019). Specifically, two LR models were developed to identify factors triggering positive (model B), and negative (model A) changes in wine consumption frequency during the first lockdown. For the sake of the analysis, consumers of alcoholic beverages who do not drink wine and missing income values were excluded through listwise deletion, thus reducing the sample to 1018 respondents. The enter method was preferred to the stepwise procedure, as the latter tends to produce sample-specific results (Hair et al., 2019). Regressors were selected based on the literature. Variance Inflation Factor (VIF) and Tolerance were used to check for multicollinearity, and all values were within the recommended thresholds (VIF<5; Tolerance>0.2; Hair et al., 2019). Although the primary aim of the analysis is explanatory, additional fitting diagnostics were performed. Overall

predictive accuracy of the models was assessed through Receiver Operating Curves (ROC) and Area Under Curve (AUC). According to Hosmer et al. (2013) thresholds, both models show excellent discrimination power (AUC model A = .82; AUC model B = .87).

Table 1 Descriptive statistics of the sample

	Frequency	%		Frequency	%
Gender			**n° adults (respondent included)**		
Male	622	57.8	1	22	2.0
Female	454	42.2	2	145	13.5
Age			3	492	45.7
18-29	223	20.7	4	199	18.5
30-40	176	16.4	5	161	15.0
41-50	269	25.0	≥6	57	5.3
51-60	244	22.7	**Income**		
>60	164	15.2	Very problematic	13	1.2
Employment (n=1075)			Problematic	76	7.1
Agriculture	146	13.6	Sufficient	390	36.2
Industry	104	9.7	Good	539	50.1
Service	618	57.4	Pref. No answer	58	5.4
Student	125	11.6	**Motivations for wine consumption**		
Retired	58	5.4	Socialisation (yes)	372	34.6
Unemployed	24	2.2	Relax (yes)	290	27.0
Has children living in the household			Health (yes)	118	11.0
No	736	68.4	Food (yes)	738	68.6
Yes	340	14.6	Taste (Yes)	788	73.2
Area of residence			**Average bottle price wine before the lockdown (n=1052)**		
Rural	240	22.3	<5€	148	13.8
Residential	331	30.8	5-10€	439	40.8
Urban	505	46.9	11-20€	359	33.4
Frequency of digital gatherings during the lockdown			21-30€	75	7.0
Did not do it	161	15.0	>30€	31	2.9
Rarely	517	48.0	**Has a wine app**		
At least once a week	181	16.8	No	750	69.7
Every day	217	20.2	Yes	326	30.3
Wine consumption frequency before the lockdown			**Wine consumption frequency in lockdown**		
Never (0)	19	1.8	Less frequent.	478	44.4
<1 a month (1)	50	4.6	Unchanged	251	23.3
At least 1 a month (2)	134	12.5	More frequent	347	32.2
At least 1 a week (3)	568	52.8			
Daily (4)	305	28.3			
Beer consumption frequency before the lockdown			**Beer consumption frequency in lockdown**		
Never (0)	127	11.8	Less frequent	563	52.3
<1 a month (1)	158	14.7	Unchanged	333	30.9
At least 1 a month (2)	265	24.6	More frequent	180	16.7
At least 1 a week (3)	486	45.2			
Daily (4)	40	3.7			
Spirits consumption frequency before the lockdown			**Spirits consumption frequency in lockdown**		
Never (0)	279	25.9	Less frequent	565	52.5
<1 a month (1)	309	28.7	Unchanged	414	38.5
At least 1 a month (2)	260	24.2	More frequent	97	9.0
At least 1 a week (3)	214	19.9			
Daily (4)	14	1.3			

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Willingness to support Italian wine producers buying national wine	2.6	2.6	24.6	37.7	32.4
Feeling of isolation (inverted)	0.9	3.6	26.4	47.8	21.3
Fear of the economic crisis	0.8	5.8	14.2	46.0	33.2
Fear of the virus	3.8	15.0	33.0	40.1	8.1
Refocus on me during the lockdown	2.4	8.7	30.9	44.3	13.7

Note: where not specified, n=1076. The % column reports the valid percentage.

4. Results

Wine consumption: the pre-lockdown scenario

Before the beginning of the pandemic, most respondents were regular wine consumers drinking wine at least once a week (52.8%; 53.2% excluding abstainers) or daily (28.3%; 28.6% excluding abstainers) (Table 1). Concerning other alcoholic beverages, the majority used to consume beer weekly (45.2%; 45.6% excluding abstainers) and spirits sporadically (54.6% once a month or less; 55.1% excluding abstainers). Based on ISTAT data, the share of daily wine consumers in the sample is higher than the Italian national average (17.6%)[3]. Wine mainly was consumed for its taste, socialising, and paired with food during meals (Table 1). Coherently, it was prevalently drunk with friends and relatives. Adapting the Rabobank wine classification (Heijbroek, 2003), two main segments of wine consumers can be identified based on the average price per bottle: premium wine consumers, purchasing wine ranging between 5 and 10 Euros per bottle (40.8%) and super-premium ones, who usually buy wines priced between 11 and 20 Euros (33.4%). Accordingly, half of the respondents declared a good economic situation (50.1%). Results suggest that the sample comprises wealthier, higher-end consumers compared to the average Italian population since market data on domestic wine sales report an average price-per-litre of 3.27 € (IRI, 2009). However, this average price accounts only for off-trade sales in supermarkets and discounts. Such sales channels usually offer wines at a lower average price point than restaurants and *enoteche*, i.e., Italian specialized wine shops, which are excluded. Accordingly, *Enoteche* is the third most important shales channel for wine in the sample (45.5%) after cellar door sales (direct sales, 48.0%) and supermarkets (51.2%). Other channels such as e-commerce (12.8%) play a minor role, despite the high digitalisation level: indeed, 40% declared that they have a wine app on their smartphone. Anyhow, the share of online buyers in the sample more than doubles the average data reported in the sector literature for online wine sales in developed countries, which is approximately 5% (Higgins et al., 2015). Additionally, 70% of respondents declared a great willingness to support local wine producers in response to the Covid-crisis by preferring domestic wines.

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[3] ISTAT data refer to Italians of 11 years old or older who consumed at least one alcoholic beverage during the reference year (2019). Therefore, abstainers are excluded.

Psychological difficulties during the lockdown

As expected, psychological difficulties are strongly felt by all respondents. In particular, the greatest worry concerns the negative economic impact of the pandemic (79.2%; Table 1). Financial concerns are strong enough to overcome the fear of the virus, which, notwithstanding its life-threatening nature, is suffered by less than a half of the sample. A feeling of isolation, intended as the impossibility to relate with, talk with, and rely on others, also emerges as a dominant feeling for most respondents (69.1%; Table 1), despite most of them not living alone. However, positive emotions also emerged, as many interviewees see the lockdown as a chance to refocus on themselves (58.0%). Therefore, among the multitude of negative feelings, respondents could see the bright side of the situation.

Changes in wine consumption during the lockdown

Most of the wine consumers interviewed kept purchasing wine during the lockdown (75.7%) without changing the average bottle price (Table 2). However, part of the sample has either reduced the average bottle expenditure (34.1%) or completely stopped purchasing the product (22.5%).

Table 2 Changes in wine purchase pattern following the lockdown

Changes in wine purchase pattern during the lockdown		
	Frequency	%
wine purchase behaviour in lockdown		
Does not buy wine	19	1.8
Stopped buying wine	242	22.5
Kept buying wine	815	75.7
Average bottle price variation in lockdown		
Reduced	367	34.1
Unchanged	647	60.1
Increased	62	5.8

Note: n=1076.

In this regard, the presence of over 22% of respondents drinking wine from their personal stock while in lockdown (a 134% increase compared to the pre-pandemic scenario) suggests that a stop in wine purchases does not necessarily correspond to a reduction in its consumption. Crosstabulations support this hypothesis, as the stop in wine purchase is not significantly related to reducing wine drinking frequency during the lockdown (chi-square: .67, p = .418). Among respondents who kept purchasing wine, results highlight several changes in their wine consumption habits during the lockdown. First, mobility restrictions and confinement impacted both consumption occasions and buying channels. As can be observed in Table 3, respondents

consumed wine mostly with their relatives (78.1%) or alone (26.4%) while in lockdown. Virtual meetings became an alternative social drinking occasion for 13.5% of the sample. Although the share of respondents is limited, this finding suggests virtual gatherings constituted a tool to keep the social dimension of wine alive since the majority of respondents who drunk wine on such occasions also reported socializing as a motivation for drinking it (57.2%; chi-square: 38.07, p<0.001).

As regards sales channels, the mandatory closure of several business activities has inevitably impacted wine purchase patterns, especially for the large share of consumers who used to purchase wine directly from the producer (48.0%) or specialized wine shops (45.4%) (Table 3). On the other hand, online wine shoppers increased by 43% (Table 3), 43.4% of which are first-timers (Table 4). This observation leads us to assume that online wine sales partially counterbalanced the inaccessibility of most sales channels.

Table 3 Evolution of wine sales channel and consumption context: before and during the lockdown

	BEFORE the lockdown		DURING the lockdown		Δ
	Frequency	Valid %	Frequency	Valid %	
wine consumption context					
Friends	857	79.6	83	7.7	-90%
Family	754	70.1	840	78.1	11%
Colleagues	215	20.0	31	2.9	-86%
Alone	193	17.9	284	26.4	47%
Digital gatherings	11	1.0	145	13.5	1218%
Source of the wine consumed					
Supermarket	551	51.2	510	47.4	-7%
Direct sales	517	48.0	154	14.3	-70%
Specialized wine shop	489	45.4	112	10.4	-77%
Online	138	12.8	198	15.8	43%
Personal wine stock	103	9.6	241	22.4	134%
Food shop	66	6.1	66	6.1	0%
Take away shopping	6	0.6	10	0.9	67%

Note: n=1076.

Table 4 Online wine shopping during the lockdown

Online wine shopping in lockdown	n.	%
Purchased wine online in lockdown	198	15.8
for the first time	86	43.4
as usual	66	33.3
more frequently	46	23.2

Note: n=1076.

The lockdown imposed by the Covid-19 pandemic significantly affected wine consumption frequency: 23% of the sample kept drinking wine as often as before the pandemic, while the great majority either increased (32.2%) or decreased it (44.4%). Model A and Model B investigate factors impacting the decrease (DV1) and increase (DV2) in wine consumption frequency among wine consumers during the first lockdown (Table 6). Only complete surveys from wine consumers are considered, thus reducing the sample to 1018 respondents. First, results reveal that none of the psychological difficulties considered directly affects DV1 nor DV2. Both decrease and increase in wine consumption frequency are connected to a parallel modification of beer (VARBC) and spirits (VARSC), suggesting variations in wine consumption are attributable to a change in the overall alcoholic beverages' consumption pattern. Nevertheless, the effect of beer consumption frequency is considerably greater than that of spirits. Accordingly, when considering the total expenditure for all alcoholic beverages analysed during the lockdown, only wine (for model A and B) and beer (for model B) expenditure significantly affect the DV.

Focusing on model A (DV1), a reduced wine consumption frequency is related to a decreased beer consumption (VARBC_RED). Coherently, these respondents have not increased total expenditure on wine (INCREXP_W), and no significant effects emerged for variations in the total spending on beer (INCREXP_B). None of the sales channels shows a substantial impact on the DV1. Families with children (CHILDY) are less likely to have reduced wine consumption in lockdown. On the contrary, a significant positive effect emerged with age, indicating that older subjects have greater odds of shrinking their wine consumption frequency in lockdown. Among the reasons for drinking wine, health and relaxation emerged as significant factors impacting DV1: while drinking to relax (R_RELAX) decreases the odds of reducing wine consumption frequency in lockdown, consuming wine for its health properties (R_HEALTH) seems to promote this behavioural modification. Despite the closure of bars and ban on social gatherings, no significant effects emerged from socialisation as a motivation for drinking wine (R_SOC) and drinking with friends and colleagues before Covid (BC_FRICOL). Respondents' wine consumption frequency before the pandemic (WCONS_B) negatively impacts DV1 for regular consumers (i.e., drinking wine at least once a week and daily wine drinkers). Moreover, people who used to drink wine with family members before Covid (BC_FAM) show higher odds of decreased consumption frequency. Finally, consumers willing to support Italian wine producers (LOC_SUPP) show significantly lower odds of drinking less frequently in lockdown.

Factors driving an increased consumption frequency in lockdown (model B; DV2) are having children (CHILDY), willingness to refocus on oneself (REFOFEEL), drinking wine for relaxation (R_RELAX) and for its palatability (R_TASTE), and the willingness to support domestic wine producers. Indeed, all these predictors are connected to greater odds of drinking wine more often in lockdown. Conversely, being female and spending more on beer decrease the odds of having consumed wine more often during the lockdown. Model B also highlights a potential substitution effect in favour of wine. Indeed, DV2 is significantly impacted by increasing (VARBC_INCR) and decreasing (VARBC_RED) beer consumption frequency, although the former's effect shows a greater magnitude. Crosstabulations (Table 5) reveal that 30.7% of interviewees who drink wine more often have simultaneously reduced both beer and spirits consumption frequency, and 11.2% reduced beer only. Nevertheless, this substitution effect involves less than half of the sample since 53.2% of respondents have increased wine and at least one other alcoholic beverage.

Table 5 Substitution effect in favour of wine and beer during the lockdown.

| | **Increased** wine consumption frequency in lockdown | | | |
| | No | | Yes | |
	Count	%	Count	%
Other	287	40.8%	175	53.2%
Reduced spirits, beer unchanged	54	7.8%	16	4.9%
Reduced beer, spirits unchanged	81	11.6%	37	11.2%
Reduced beer and spirits	273	39.6%	106	30.7%

Note: n = 1018. Pearson's Chi-square test: 15.39; p = .002.

Table 6 LR on the decrease (DV1; Model A) and increase (DV2; Model B) of wine consumption frequency in lockdown.

	A - Reduced wine consumption frequency in lockdown (DV1)								B - Increased wine consumption frequency in lockdown (DV2)							
	B	S.E.	Wald	Exp(B)	95% C.I.for EXP(B) Lower	Upper	Sig.		B	S.E.	Wald	Exp(B)	95% C.I.for EXP(B) Lower	Upper	Sig.	
AGE	0.12	0.06	3.67	1.13	1.00	1.28	0.06	*	-0.08	0.07	1.28	0.92	0.80	1.06	0.26	
GENDER	-0.13	0.17	0.57	0.88	0.63	1.23	0.45		-0.68	0.20	11.32	0.51	0.34	0.75	0.00	***
INCOME (good)			0.10				0.95				0.31				0.86	
INCOME 1 (sufficient)	0.05	0.16	0.08	1.05	0.76	1.45	0.78		-0.01	0.19	0.00	0.99	0.68	1.44	0.96	
INCOME (bad)	0.06	0.29	0.04	1.06	0.60	1.89	0.84		-0.19	0.34	0.31	0.83	0.43	1.61	0.58	
CHILDY	-0.44	0.17	6.71	0.65	0.46	0.90	0.01	**	0.46	0.19	5.67	1.58	1.08	2.30	0.02	***
CRISFEAR	-0.10	0.09	1.28	0.90	0.76	1.08	0.26		0.04	0.10	0.13	1.04	0.85	1.27	0.72	
ISOFEEL	0.16	0.10	2.45	1.17	0.96	1.42	0.12		-0.14	0.12	1.52	0.87	0.69	1.09	0.22	
VIRUSFEAR	0.08	0.09	0.92	1.08	0.92	1.28	0.34		-0.08	0.10	0.67	0.92	0.76	1.12	0.41	
REFOFEEL	-0.11	0.09	1.42	0.90	0.76	1.07	0.23		0.18	0.10	3.02	1.20	0.98	1.46	0.08	*
VARBC_NO			61.74				0.00				46.82				0.00	
VARBC_RED	1.28	0.19	44.28	3.59	2.47	5.24	0.00	***	0.45	0.23	3.68	1.56	0.99	2.47	0.06	*
VARBC_INCR	-0.18	0.31	0.33	0.84	0.46	1.53	0.57		2.24	0.34	44.17	9.40	4.86	18.20	0.00	***
VARSP_NO			11.44				0.00				12.95				0.00	
VARSPC_RED	0.52	0.19	7.91	1.68	1.17	2.41	0.01	***	0.28	0.22	1.57	1.32	0.86	2.03	0.21	
VARSPC_INCR	-0.29	0.35	0.66	0.75	0.38	1.50	0.42		1.37	0.38	12.94	3.94	1.87	8.30	0.00	***
INCREXP_W	-1.80	0.21	77.15	0.17	0.11	0.25	0.00	***	2.77	0.21	169.74	15.92	10.50	24.13	0.00	***
INCREXP_B	0.36	0.27	1.72	1.43	0.84	2.44	0.19		-0.96	0.32	9.14	0.39	0.21	0.71	0.00	***
INCREXP_SP	0.33	0.38	0.76	1.40	0.66	2.96	0.39		-0.36	0.41	0.78	0.70	0.31	1.56	0.38	
BL_ALONE	0.34	0.21	2.57	1.41	0.93	2.14	0.11		-0.19	0.25	0.62	0.83	0.51	1.33	0.43	
BL_FAM	0.36	0.19	3.76	1.44	1.00	2.07	0.05	**	0.13	0.21	0.38	1.14	0.75	1.72	0.54	
BL_FRICOL	-0.15	0.22	0.46	0.86	0.56	1.32	0.50		0.32	0.26	1.49	1.38	0.82	2.31	0.22	
LC_ONLINE	0.39	0.24	2.59	1.47	0.92	2.36	0.11		-0.31	0.28	1.25	0.73	0.43	1.26	0.26	
FREQ_DIGIMEET	0.02	0.08	0.04	1.02	0.86	1.20	0.84		-0.10	0.10	0.96	0.91	0.75	1.10	0.33	
R_SOC	-0.22	0.17	1.66	0.80	0.57	1.12	0.20		-0.09	0.20	0.20	0.92	0.62	1.36	0.66	
R_TASTE	-0.11	0.19	0.35	0.89	0.62	1.30	0.56		0.50	0.23	4.59	1.65	1.04	2.61	0.03	**
R_FOOD	-0.11	0.18	0.41	0.89	0.64	1.26	0.52		0.18	0.21	0.73	1.19	0.80	1.79	0.39	
R_HEALTH	0.81	0.26	10.22	2.26	1.37	3.72	0.00	***	-0.18	0.28	0.41	0.84	0.48	1.45	0.52	
R_RELAX	-0.43	0.19	4.84	0.65	0.45	0.96	0.03	**	0.74	0.22	11.86	2.10	1.38	3.20	0.00	***
SCBL_SUPER	0.06	0.17	0.11	1.06	0.76	1.46	0.74		-0.13	0.20	0.44	0.88	0.60	1.29	0.51	
SCBL_ONLINE	0.39	0.23	2.70	1.47	0.93	2.32	0.10		-0.11	0.27	0.17	0.90	0.53	1.51	0.68	
SCBL_DSALE	0.15	0.17	0.79	1.16	0.84	1.61	0.37		0.01	0.20	0.00	1.01	0.69	1.48	0.98	
SCBL_WSHOP	-0.07	0.16	0.16	0.94	0.68	1.28	0.69		-0.18	0.19	0.93	0.84	0.58	1.21	0.34	
WCONS_B (occasional)			30.26				0.00				24.37				0.00	
WCONS_B (regular)	-0.57	0.26	4.77	0.57	0.34	0.94	0.03	**	0.85	0.32	7.20	2.33	1.26	4.34	0.01	**
WCONS_B (daily)	-1.04	0.19	28.84	0.35	0.24	0.52	0.00	**	1.15	0.23	24.21	3.16	2.00	5.01	0.00	***
LOC_SUPP	-0.21	0.09	6.18	0.81	0.68	0.96	0.01	**	0.22	0.10	4.65	1.24	1.02	1.51	0.03	**
Constant	0.30	0.75	0.15	1.34			0.69		-4.26	0.90	22.43	0.01			0.00	

Notes: n=1018. * p < .09; ** p < .05; *** p < .001.

A: Hosmer and Lemeshow Test: chi-square 10.24, sig. 0.249. Pseudo R-square: Cox & Snell=0.28, Nagelkerke=0.38. Accurancy= 75.6%.

B: Hosmer and Lemeshow Test: chi-square 11.93, sig. 0.154. Pseudo R-square: Cox & Snell=0.36, Nagelkerke=0.50. Accurancy= 82.3%.

5. Discussion and conclusions

Covid-19 has profoundly changed people's lifestyles, disrupted everyday habits, and exposed them to considerable psychological pressure. Our results highlight that such pressure arises primarily from concerns for the economic and financial instability caused by the pandemic, followed by the fear of the virus.

Wine consumption is confirmed to be deeply rooted in the Italian population's habits. Descriptive analysis reveals a significant pre-existing preference for wine, which was the most assiduously consumed alcoholic beverage before the lockdown. Specifically, our sample reports a higher share of daily wine consumers compared to the 2019 Italian national average (ISTAT). This outcome may signal a general increase in everyday wine consumers in Italy compared to 2019, although it may be connected to respondents' self-selection based on their interest in wine. Indeed, the latter is acknowledged as a drawback of the sampling technique adopted (i.e., snowball), calling for further research to confirm this result. Despite the disruptive effect of the pandemic, our results highlight that the vast majority of the sample kept purchasing wine (75.7%) without lowering the average price per bottle (60.1%). Market data on agri-food products and supply during the pandemic confirm a moderate but positive trend for wine sales (+9%) during the lockdown, performing better than other beverages (+6%) (ISMEA, 2020a, 2020b, 2020c). Accordingly, most respondents kept consuming wine, notwithstanding the substantial context changes. In this respect, both regular and daily wine drinkers, the most common consumers within the Italian population (ISTAT, 2020), are likely to have drunk wine more frequently during the lockdown than the reverse. Consistent with Wood et al. (2005), these findings represent an indicator of the strength of the wine consumption habit. Results also show that 22.5% of the sample stopped purchasing wine in lockdown, with a similar number of respondents (22.4%) who consumed wine from their wine stock. Although the current study has not investigated the size of this stock, this finding partially explains the non-significant association between stopping shopping for wine and reducing wine consumption in lockdown. It also reveals the presence of a wine stock in an interesting slice of Italian wine consumers, which calls for further investigations.

Nevertheless, the impact of shock and habits disruption emerges on sales channels, consumption occasions, and wine consumption frequency. Following the pandemic, most consumers kept buying wine in supermarkets, while mobility restrictions have significantly penalised other important sales channels such as wine shops and direct sales. The online channel has in part benefited from the lockdown, recording a 43% increase and managing to

attract new buyers. Although the relevance of online wine sales is limited, these extraordinary circumstances may lead to long-run effects on this sales channel, accelerating its growth in two ways: pushing consumers to try online wine shops and wine retailers to improve/create their online offer. While the lower share of elderlies in the sample may result in an overestimation of the positive trend that emerged for online wine sales, market data support this finding: during the two months of lockdown, online demand for agri-food products recorded a 141% growth (IRI, 2020). Consumption occasions also suffered from the stringent limitations imposed, as the only options during the lockdown were consuming wine alone or with household members. It is reasonable to believe that such effects will be temporary, as the reduction of wine consumption frequency in lockdown by people who used to drink wine at family gatherings probably resulted from forced separation from other family members.

Virtual gatherings emerged as a new drinking occasion, although for a limited share of consumers. In this study, the emerging trend of the virtual *aperitivo* was intended solely as virtual gatherings organised independently by consumers. Given the prolonged duration of the pandemic and the importance of social occasions as a wine consumption motivation, though, the diffusion of virtual drinking activities may have increased. Moreover, wineries and wine shops started offering online tasting experiences as a marketing tool to keep existing consumers loyal and attract new ones. Therefore, further investigations are needed to deeply explore the future potential of virtual wine experiences and their role in wine marketing, providing suggestions on how to design them effectively.

Regarding wine consumption frequency, most respondents modified it either positively (32.2%) or negatively (44.4%). Being a woman reduces the odds of having increased wine consumption frequency. Since the whole population was subjected to the same considerable pressure originating from the pandemic, it seems that drinking wine did not represent relief for women in lockdown as it potentially did for men. This result aligns with past findings from Dawson et al. (2005) and APA (2012).

Variations in wine consumption frequency appear to go hand-in-hand with other alcoholic beverages, moving in the same direction. Notably, the increase in wine consumption frequency in lockdown is associated with a simultaneous change in spirits, especially beer. In this respect, we can assume that the lockdown may have constituted a burden encouraging alcohol consumption. This finding aligns with the existing literature identifying traumatic situations as a promoter of alcoholic beverages consumption (e.g., Bartone & Homish, 2020; Bartone et al., 2017; Clay & Parker, 2020; Horton, 1943; Powers & Kutash, 1985). In this regard, it should be

noted that this study focuses on consumption frequency, while no information is collected on volumes consumed.

Substitution effects are qualitatively evaluated based on changes in consumption frequency. A minor substitution effect in favour of wine is detected. Still, its limited extent suggests that the lockdown pushed consumers to drink the alcoholic beverages they consumed before Covid more often, rather than switching from one to another.

Regarding families, the model shows that having children increases the odds of a higher consumption frequency in lockdown. This finding suggests that forced 24-hour cohabitation and the prolonged home-confinement may have turned parenthood into a reason for drinking more frequently. Further analyses should be conducted to explore this relationship and the behavioural role of parenting as a stressor in the context of the pandemic.

Accordingly, relaxation and hedonistic health and well-being – i.e., focusing on the self (Huta, 2015) – trigger an increase in wine consumption frequency, highlighting wine may have played a role in mitigating the psychological pressure caused by the lockdown in a context where other alternatives to relax were not available.

Besides, the fact that drinking wine for its health benefits is linked to a reduced wine consumption frequency in lockdown, jointly with the connection between a reduced wine and beer drinking frequency, suggests the context of the pandemic brought a share of respondents to re-evaluate their personal priorities (Sigala, 2020; Wood et al., 2005), discouraging alcoholic beverages consumption. Indeed, drinking alcohol in a context where people's survival is at stake may have assumed a negative connotation (Bazzani et al., 2020).

To conclude, many factors impacting wine consumption seem to be context-related and therefore are expected to have short-term effects. Nevertheless, some of them may affect wine demand in the long term: mainly, the emergence of virtual wine experiences and the growth in online wine shopping. Still, wine consumption appears to be a strong habit among Italian consumers, which managed to survive the profound context changes induced by the pandemic. These are encouraging signals for Italian wine producers, especially considering the strong willingness to support domestic wineries that emerged among respondents. Indeed, willingness to support domestic wine producers by purchasing their wines positively affects wine consumption frequency in lockdown, promoting its increase. Future studies should validate the results obtained and highlight potential changes that occurred with the evolution of the pandemic considering the uncertainty around its future evolution, which creates a metamorphic context that makes it particularly difficult to forecast how consumers will react. Indeed, in the short-run, similar phenomena can jeopardise sectors dynamics (Vergamini et al., 2021) with

relevant financial consequences for the involved stakeholders. Within the perspective of a prolonged health emergency, information on the development of wine consumers' behaviour in the current, unprecedented circumstances such as that provided by this study is strategic to help the wine sector's actors plan future market strategies. Indeed, the continued circulation of the virus requires wine producers and stakeholders to adapt to Covid-induced changes in consumer behaviour that cannot be considered transitory.

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Chapter 2 – Does Covid scare wine travellers? Evidence from Italy and France[4]

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Abstract

Tourism is sensitive to shock, and the Covid pandemic has profoundly changed sector dynamics. Although wine tourism is primarily a form of proximity tourism, the pandemic may have affected wine travellers' behaviour and intention to go on a wine holiday. This exploratory study proposes a comprehensive analysis of the impact of Covid-related fear and anxiety on wine tourism intentions after the first lockdown considering both contextual factors and the main antecedents of wine tourism acknowledged by the literature. An online survey was delivered to a sample of 553 wine tourists from Italy and France, two major wine tourism destinations. Results highlight changes in wine travel patterns after the pandemic, which boosted post-lockdown wine tourism intentions. Indeed, the latter is not negatively impacted by fear of contagion, while it is enhanced by dedicating time to wine in lockdown and willingness to support local wine producers. Finally, implications for sectors stakeholders are suggested.

Keywords: Covid-19, wine tourism, travel intentions, covid phobia, involvement with wine

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1. Introduction

As past studies highlighted, tourism is vulnerable to shocks. Natural disasters like tsunamis (Calgaro & Lloyd, 2008), earthquakes (Mazzocchi & Montini, 2001) and floods (Faulkner & Vikulov, 2001) have an inevitable impact on tourism flow. In addition, the industry is affected by terrorism threats like 9/11 in the U.S. (Bonham, Edmonds, & Mak, 2006; Gut & Jarrell, 2007) or the increased frequency of terrorist attacks in France from 2010 to 2017 (Gergaud, Livat, & Song, 2018; G. Song, Khan, & Yang, 2019) and by war (Fleischer & Buccola, 2002). A global economic crisis can also impact tourism (H. Song & Lin, 2010). The Covid-19 pandemic has highlighted the susceptibility of tourism to measures implemented to counteract the circulation of the virus, mainly restricted mobility and social distancing (Gössling & Lund-Durlacher, 2021). According to the United Nations World Tourism Organization (UNWTO), international arrivals in Europe dropped by 68% between January and August 2020 compared to 2019, leading to the worst negative peak since the 1950s. In the past, research has shown that international tourism has been damaged by other health emergencies such as the Avian flu, with more significant damage on Asian tourism (H.-I. Kuo, Chang, Huang, Chen, & McAleer, 2009). Kuo et al. (H. I. Kuo, Chen, Tseng, Ju, & Huang, 2008) also showed that the local number of cases had affected international tourists' arrival in SARS -affected countries but not in Avian flu-affected countries. A similar result was obtained by McAleer et al. (McAleer, Huang, Kuo, Chen, & Chang, 2010). Tourism in developing economies is subject to the epidemic crisis because of induced effects due to their geographical or physical proximity to the outbreak's source (e.g. 14 in the case of Ebola). Nevertheless, different tourist populations can react differently to epidemics. For instance, pregnant women or travellers of reproductive age travelled significantly less to Zika-affected regions after the Zika-birth defects association became well known (Gallivan et al., 2019). Lastly, eradicating infectious disease risks associated with Malaria, Dengue, Yellow Fever, and Ebola could increase international tourism demand and tourism expenditure (Rosselló et al., 2017). Due to its strong vulnerability, the tourism industry has become more flexible and increasingly resilient to crises. Some shocks are transitory, even if returning to pre-disaster levels can take years. The speed of recovery depends on the extent of the damage caused by the disaster, on the ability of tourism stakeholders to rebuild facilities and infrastructures, and on effective communication stating clearly that the destination is safe (Durocher, 1994). This is the case of Malaysia (a developing country and second destination in Asia), subjected to the Asian financial crisis, the outbreak of Avian flu and SARS, the Asian tsunami, and the threat of terrorism (Lean and Smyth, 2009). In

Taiwan, visitors' arrivals had not fully recovered 11 months after an earthquake (Huang & Min, 2002). Cultural differences play a role in the recovery of disaster-hit destinations (Rittichainuwat, 2011). In the path toward recovery, the destination's attribute can also change and attract some dark tourism (Biran et al., 2014). Shocks can also lead tourists to substitute destinations (Song et al., 2019). However, the Covid-19 crisis led the tourism industry to face a pandemic, i.e., a global crisis in which substituting destinations is not feasible because of mobility restrictions. Lastly, tourism can respond to shocks and become an engine for economic recovery (Dogru & Bulut, 2018; Cheng & Zhang, 2020). To the best of our knowledge, the impact of the Covid-19 pandemic on wine tourism has not yet been analysed. wine tourism can be seen as local tourism substituting non-local (i.e., international) tourism. This local tourism can be favoured in a context of restricted mobility and fear of contagion due to the lack of immunization coverage or fear of travelling abroad due to a lack of knowledge. Moreover, tourists might privilege short breaks instead of extended stays with an economic downturn. Proximity has been identified as a critical factor for the success of wine tourism (Getz & Brown, 2006). wine tourism has also been identified as a substitute for urban tourism, as it is perceived as safer in the case of a terrorist threat (Song et al., 2019). Moreover, as tourism stakeholders claim for more sustainable practices and the need to question the volume growth of the international tourism industry in a climate change context (Gössling & Lund-Durlacher, 2021), wine tourism could be a possible answer. Following the pandemic, clusters of wineries that rely mostly on foreign tourism like those identified in the Conegliano Valdobbiadene area (Boatto, Galletto, Barisan, & Bianchin, 2013) can strongly benefit from these behaviours. In this respect, it is worth understanding post-lockdown domestic wine tourism intentions. In this article, we aim at assessing whether and to what extent the pandemic impacted wine tourism intentions (WTINT) in both the short- and long-term, starting from the main antecedents identified by the sector's literature such as involvement with wine (WI), while considering new contingency factors such as the effect of fear and anxiety towards the virus, further referred to as Covid Phobia (CPH), and acquired interest in wine during the lockdown (AQWINT). Changes in wine tourism travel patterns following the pandemic are also explored. We focus on the Italian and French contexts, two countries with the highest number of wine tourists in Europe, respectively 14 (Garibaldi, 2020) and 10 million a year. The relevance of this analysis lies in its contribution to shed light on how the Covid-trauma impacted wine tourists' travel intentions, which is key to predicting future demand developments and drafting appropriate recovery strategies. The present study is among the first to assess the impact of Covid and of the lockdown on wine tourism. In light of the uncertainty

around the evolution of the current pandemic and its severe consequences on the tourism sector, this information is strategic to tourism operators and especially to wineries for understanding how the virus impacted wine tourists' behaviour and effectively plan a recovery strategy. Certainly, wine tourism is an important tool for building and strengthening brand reputation (Winfree, McIntosh, & Nadreau, 2018), boosting both awareness and demand of a product (Castriota & Delmastro, 2015). Findings also provide useful information for planning communication and marketing activities in the pandemic context. The following section (section 2) provides an overview of the main acknowledged antecedents of wine tourism intentions and context-related factors that can impact the latter. Section 3 describes materials and methods, including a sample description, while section 4 presents the results obtained. Finally, section 5 discusses the key findings and related implications for the wine tourism sector.

2. Literature review

To date, a crescent body of literature has developed on the antecedents of wine tourism intentions (Afonso, Silva, Gonçalves, & Duarte, 2018; Abel D. Alonso, Fraser, & Cohen, 2008; Sparks, 2007). A key element characterising wine tourism research is involvement with wine (WI), which is identified as a vital driver of the intention to partake in wine tourism (Brown, Havitz, & Getz, 2007; Sparks, 2007), affecting wine tourists' experiential priorities (Sparks, 2007). The advent of an extraordinary event like the Covid-19 pandemic, though, has caused radical changes in people's known normality on multiple levels, consequently impacting their behaviour. Mainly, tourism is among the hardest-hit sectors due to the strict limitations to mobility imposed by governments and the high risk of infection connected to travelling as a social activity. In his respect, people may have developed fear and anxiety toward the virus that may negatively impact travel intentions. On the other hand, the several prolonged lockdowns imposed in most countries forced people to slow down and have potentially more free time to explore their interests (Gammon & Ramshaw, 2020). The following sections will provide an overview of the main antecedents of wine tourists' behavioural intentions identified by the sector's literature and fear and anxiety towards the novel Coronavirus.

Fear of Covid-19 and Covid-phobia

Due to its disrupting effects on worldwide economies, its ease of transmission and the life-threatening nature of the Sars-CoV-2 illness, the Covid-19 outbreak prompted the diffusion of fear and anxiety in human society (Ahorsu et al., 2020; Luo & Lam, 2020; Mamun & Griffiths, 2020). The literature defines fear as an emotion caused by danger, pain or harm (De Hoog, Stroebe, & De Wit, 2008; Luo & Lam, 2020), representing the awareness of danger (Luo & Lam, 2020). Anxiety, instead, is a psychological response to fear (Clark & Beck, 2011). Differently from psychological discomforts deriving from other extreme events such as natural disasters (Lazaratou et al., 2018; Longman et al., 2019) or accidents (Dai et al., 2018), those induced by human-to-human transmissible diseases like Covid-19 are extensive and long-standing (Lin et al., 2020).

A prolonged and amplified state of fear and anxiety towards a major catastrophic situation like the current pandemic may trigger anxiety disorders defined as phobias (Arpaci, Karataş, & Baloğlu, 2020). In this respect, Arpaci et al. (2020) developed a psychometric, self-report tool – the Covid Phobia Scale (C19P-S) – to diagnose what they classify as corona phobia. Notably, high values recorded by the scale detect the presence of a state of great fear and anxiety towards the virus, suggesting the subject may be affected by corona phobia. The CFS is composed of 4 dimensions – economic, psychological, psychosomatic, and social – representing the four main domains affected by the pandemic. The social dimension is particularly relevant when dealing with (wine) tourism activities since Covid-19 is an airborne disease spread through small liquid particles, called droplets, emitted when talking, coughing or sneezing (Schijven et al., 2020). Indeed, tourism implies social interactions and prolonged and uncontrolled contact with potentially infected people coming from all over the world. Although the global diffusion of the virus may have levelled out the perceived risk of infection when travelling to other destinations (Luo & Lam, 2020), fear and anxiety towards the virus can lead to perceiving travels as a dangerous activity and, consequently, negatively impact on post-lockdown wine tourism intentions (ALWTINT).

Hence, we postulate the following hypotheses:

H1. Covid phobia impacts negatively on post-lockdown wine tourism intentions.

H2. Covid phobia mediates the effect of future wine tourism intentions on post-lockdown wine tourism intentions.

Involvement with wine

The key role of involvement in marketing is widely recognized among marketing and behavioural scholars (Michaelidou & Dibb, 2008) as it is acknowledged to affect consumer decision-making processes and behaviour (Broderick & Mueller, 1999; Prebensen, Woo, Chen, & Uysal, 2013). The literature distinguishes among three types of involvement: enduring or personal, connected to the presence of a long-term personal relevance (Lockshin & Spawton, 2001; Ogbeide & Bruwer, 2013), physical, arising from specific product characteristics, and situational, which is short-term and results from temporary changes in a consumer's environment. Personal product involvement is the most commonly adopted, and it is defined as a subject's perceived relevance of an object based on his/her inherent needs, values, and interests (Zaichkowsky, 1985, p. 342). Considering the hedonic nature of wine and wine tourism consumption, it is not surprising to find extensive sector research embodying the concept of involvement with wine (J. Bruwer & Buller, 2013; Johan Bruwer & Lesschaeve, 2012; Roe & Bruwer, 2017). Hedonic products, indeed, tend to create higher involvement (Lesschaeve & Bruwer, 2010). Mainly, findings reveal that product involvement can significantly affect wine consumers when choosing which wine to purchase (J. Bruwer & Buller, 2013), impacts on wine tourists' behavioural intentions (Sparks, 2007), motivations (Afonso et al., 2018) and travel patterns (Brown et al., 2007). However, the extent of its effect may change based on socio-demographics such as age (Johan Bruwer & Huang, 2012; Roe & Bruwer, 2017). Since wine tourism falls into the category of leisure travel activities, the most appropriate type of involvement to be considered according to the literature is enduring involvement, also referred to as personal involvement. Recently, Bruwer and Huang (2012, p. 463) defined the concept of personal involvement in the field of wine research as "a motivational state of mind of a person with wine or wine-related activity…which reflects the extent of personal relevance of the wine-related decision to the individual in terms of one's basic values, goals, and self-concept."

In this respect, Brown, Havitz & Getz (2007) conceptualised a reliable tool to capture ego-involvement with wine in the wine tourism context – the wine Involvement Scale (WIS) – by extending Laurent & Kapferer's (1985) widely applied Consumer Involvement Profile (CIP) scale. Indeed, the CIP scale has been applied by several tourism studies in different cultural contexts, which contributed to proving its consistency (Gursoy & Gavcar, 2003).

Notably, the WIS developed by the authors includes 15-items grouped into three dimensions: expertise, enjoyment, and symbolic centrality. By segmenting a sample of fine wine consumers based on the WI construct, the authors found that different involvement segments show

significantly different intentions to visit a wine region in the near future, highlighting the central role of involvement in predicting wine tourism. Sparks (2007) further underlined the critical role that ego-involvement can play as a motivator in wine tourism. The following hypotheses are accordingly proposed:

H3. Involvement with wine positively affects post-lockdown wine tourism intentions.

H4. Involvement with wine positively affects future wine tourism intentions.

Acquired interest in wine and solidarity during the first lockdown

As mentioned above, the high infection rate of Covid-19 (Luo & Lam, 2020) forced entire countries into lockdowns. As a result, only first necessity industries (e.g., food and pharmaceutical industries) were allowed to operate. Obliged to slow down, people found more free time on their hands, which could be dedicated to exploring their interests and leisure activities (Gammon & Ramshaw, 2020). Interest is defined as the degree of enjoyment a subject gets from specific activities (Hong, Hwang, Liu, Ho, & Chen, 2014). Based on the literature, it can be affirmed that wine tourism is driven by an underlying interest, at various levels, in wine (Brown et al., 2007; Nella & Christou, 2014). Therefore, wine tourists have plausibly employed part of their free time engaging in wine-related activities, as some did with cooking (Easterbrook-Smith, 2021), thus reinforcing their interest in wine.

Interest in wine, in its turn, is connected to the degree of involvement with the topic – i.e., to its subjective relevance for the individual – (Zaichkowsky, 1985). Consequently, the lockdown may have fostered a situational involvement with wine boosting the effect of enduring product involvement as an antecedent of leisure tourism intentions (Havitz & Mannell, 2005). As described in the previous section, involvement is acknowledged as an antecedent of the decision to partake in wine tourism, so it is reasonable to hypothesise that an increased interest in wine following the lockdown may have indirectly reinforced wine tourism behavioural intentions in both the short and on the long term. Additionally, it is expected to amplify the predictive power of enduring involvement with wine on the intention to visit a wine region. Moreover, since interests can drive intentions (Hong et al., 2014), acquired interest in wine during the lockdown is expected to impact post-Covid wine tourism intentions directly.

H5. Acquired interest in wine mediates the effect of involvement with wine on post-lockdown wine tourism intentions.

H6. Acquired interest in wine mediates the effect of involvement with wine on future wine tourism intentions.

H7. Acquired interest in wine positively affects post-lockdown wine tourism intentions.

H8. Acquired interest in wine positively affects long-run wine tourism intentions.

As pointed out by other academics (Cappelen, Falch, Sørensen, & Tungodden, 2021; Guterres, 2020), a crisis of the proportions of Covid-19 encouraged the population to prioritize society's problems over personal needs, pushing them to support national winemakers in their struggle to survive by purchasing their products. This sentiment is even more plausible considering that, already before the Covid-19 outbreak, the literature was stressing the relevance of wine tourism as a tool for sustainable rural development (Croce & Perri, 2010; Mauracher, Procidano, & Sacchi, 2016; UNWTO, 2016), and the strong association between direct sales of local producers and the desire to support to local communities (Giampietri, Koemle, Yu, & Finco, 2016). Accordingly, direct sales are one of the pillars of the wine tourism industry (Abel Duarte Alonso, Bressan, O'Shea, & Krajsic, 2015; Getz & Brown, 2006; Winfree et al., 2018). As a result, solidarity with national wineries is expected to be a positive antecedent of wine tourism intentions and to increase the willingness to go on a wine holiday after the lockdown.

H9. Willingness to support local wineries positively affects post-lockdown wine tourism intentions.

H10. Willingness to support local wineries positively affects long-run wine tourism intentions.

3. Materials and Methods

Data collection and survey

The population of interest for the study is Italian and French wine consumers possessing some degree of interest in wine and wine tourism. Given the pandemic circumstances, an online survey was launched and diffused via e-mail and Facebook groups dealing with travel and oeno-gastronomy. Specifically, over 40 Facebook groups and wine stakeholders (e.g., Associazione Italiana Sommelier) have been involved, who shared the survey with their online communities. Data collection lasted two months, June and July 2020. Alike Villacé-Molinero, Fernández-Muñoz et al. (2021), snowball sampling is deemed an appropriate sampling technique to explore travel intentions considering the urge to collect data on a rapidly evolving

phenomenon under unprecedented circumstances. This technique has been previously adopted in tourism and social science research (e.g., Baltar & Brunet, 2012; S. Park & Stangl, 2020), allowing to shrink time and monetary costs of data collection and to recruit hard to reach communities (Sabin, Johnston, & Sabin, 2010) while accounting for multiple eligibility requirements (Robins Sadler, Lee, Lim, & Fullerton, 2010). The main disadvantages of snowball sampling are self-selection bias and over-representation of subgroups having similar characteristics (Robins Sadler et al., 2010). These limitations were addressed by collecting a large sample and diversifying it socio-demographically.

The questionnaire included 7 main sections investigating the following dimensions: socio-demographics, enduring involvement with wine (WI), Covid phobia (CPH), acquired interest in wine (AQWINT), previous wine tourism experiences, post-Covid wine tourism intentions, and financial difficulties caused by the pandemic.

Specifically, the socio-demographic section captured age, gender, education, Country of residence, household composition, marital status, household income before the pandemic and its eventual change following its advent. Wine tourists are identified through one statement assessing if the respondent visited a wine-producing region and/or participated in a wine festival in the last 3 years (Brown et al., 2007).

Involvement with wine is captured through Brown et al.'s (2007) WIS, which is deemed the most appropriate for the present study due to its solid theoretical foundation and its specific application to wine tourism studies. The original scale includes 15 items measured on a 7-point Likert scale, where 1 = totally disagree and 7= totally agree. Fear of Covid is captured by adapting Arpaci et al. (2020) C19P-S. In the present study, the C19P-S is preferred to similar scales (Ahorsu et al., 2020) due to its capability to capture the effects of both Covid-related fear and anxiety. Considering the aim of the study, which is not diagnostic but rather to capture potential negative effects of Covid-19 on wine tourism intentions, the adapted C19P-S scale (CPH) includes the psychological and social dimension measured through 7 items selected based on loading scores. The importance of the social dimension is related to the fact that, as previously argued, travelling is a social activity implying several and often uncontrolled social interactions, which are a primary source of infection. Like the WIS, items are measured on a 7-point Likert scale, where 1 = totally disagree and 7= totally agree.

Five items measured on a 7-point Likert scale (1 = totally disagree to 7= totally agree) are introduced specifically for the present study to capture the effect of the lockdown, and particularly of having more free time because of it, on interest in wine (AQWINT).

A detailed description of the items adopted for each scale is provided in Table 2.

Long-term wine tourism intentions (LTWTINT) are captured through a single item adapted from Sparks (2007) and measuring the willingness to take a wine trip in a future holiday on a 7-point Likert scale (1 = totally disagree and 7= totally agree). An additional item captures the short-term intention to go on a wine trip after lifting Covid-related mobility restrictions (ALWTINT) – i.e., at the end of the first lockdown – measured on a 7-point Likert scale.

Finally, one item captures willingness to support local wineries by purchasing locally produced wines on a 7-point Likert scale (1 = totally disagree, 7= totally agree). The item is formulated as follows: "*After the COVID-19 pandemic, I think it is important to support Italian winemakers by purchasing wines produced locally*".

Sample description

A total of 751 questionnaires are collected. Incomplete surveys are excluded, and the final sample is reduced to 713 valid questionnaires. For the sake of the analysis, only people having previous wine tourism experience are considered (n=553), 412 of whom are from Italy and 141 from France. Table 1 summarizes the socio-demographic profile of the sample by country of residence of the respondents. The socio-demographic characteristics of the sample are in line with the profile of wine tourists reported by the literature, which identifies them as highly educated tourists aged from 30 to 50, women travelling with their partner, who enjoy a good economic situation (Asero & Patti, 2011; Brandano, Osti, & Pulina, 2018; Charters & Ali-Knight, 2002; Nella & Christou, 2014).

Notably, both samples present similar shares of males and females while highlighting a slight prevalence of females (53.2% in Italy; 53.9% in France). Compared to France, Italy records a higher share of singles (50.5%) and a lower average education level (17.5% of post-graduates against the 56.0% observed for France). In both samples, most respondents enjoyed either a sufficient or good economic situation before Covid-19 that did not change following the pandemic (65.0% in Italy, 66.7% in France). Nevertheless, a remarkable share of interviewees from both countries declares that his/her family income has worsened after Covid-19 (31.8% Italy; 27.0% France).

Table 1 Socio-demographic profile of respondents by Country.

		Italy (n=412)		France (n=141)	
		Frequency	%	Frequency	%
Gender	Male	193	46.8	65	46.1
	Females	219	53.2	76	53.9
Age	18-29	76	18.4	24	17.0
	30-40	121	29.4	36	25.5
	41-50	103	25.0	38	27.0
	51-60	82	19.9	26	18.4
	60+	30	7.3	17	12.1
Education	High school or lower	13	3.2	0	0.0
	College	129	31.3	13	9.2
	University	198	48.1	49	34.8
	Post-Graduate	72	17.5	79	56.0
Marital Status	Couple	204	49.5	106	75.2
	Single	208	50.5	35	24.8
Has Children	No	329	79.9	99	70.2
	Yes	83	2.1	42	29.8
Income Before Covid	Insufficient	3	0.7	4	2.8
	Just sufficient	35	8.5	17	12.1
	Sufficient	194	47.1	71	50.4
	Good	180	43.7	49	34.8
Income Variation After Covid	Much worse	12	2.9	6	4.3
	Worse	119	28.9	32	22.7
	Unchanged	268	65.0	94	66.7
	Improved	12	2.9	9	6.4
	Much Improved	1	.2	0	0.0

Note: n= 553.

4. Data analysis

A preliminary descriptive analysis is conducted through SPSS software to explore wine tourism travel patterns before the pandemic, as well as wine tourism intentions after mobility bans are lifted (ALWTINT) and in the long term (LTWTINT) among Italian and French wine tourists. AMOS software is used to perform covariance-based Structural Equation Modelling (SEM or CB-SEM). SEM is widely applied in many fields of study dealing with human-based

data as consumer behaviour studies, including tourism (Afonso et al., 2018; Fountain, Charters, & Cogan-Marie, 2020; Zatori, Smith, & Puczko, 2018). Indeed, this methodology allows path modelling and the simultaneous estimation of measurements through multiple equations. Differently from similar techniques such as Partial Least Square (PLS), SEM estimation accounts for error variance. This represents a considerable advantage for behavioural studies, where complex theoretical concepts (such as the fear of the novel Coronavirus) cannot be measured directly through a single item. Still, instead, they are captured by multi-item latent constructs (Hair et al., 2019). By accounting for the measurement error associated with the use of latent constructs and correcting for it, SEM can provide higher robustness for elaborations made on data collected from human individuals, which are often not normally distributed (Baggio & Klobas, 2017). SEM consists of two main steps: Step 1 is the evaluation of the measurement model (MM), and step 2 is the analysis of the causal relationships between constructs, i.e., the structural model (SM) analysis.

To proceed with step 1, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are run on the 3 constructs included in the MM – i.e., Covid phobia (CPH), involvement with wine (WI), and acquired interest in wine during the lockdown (AQWINT).

First, factor analysis (EFA) is run with principal components as the extraction method and oblique rotation. Like in other studies (Sparks, 2007), oblique rotation is chosen as a correlation among the items expected. The EFA confirms the 3 constructs load on different factors, 4 of the 6 items referring to symbolic centrality of WI scale loaded on a different factor showed no consistency with the rest of the scale. This is in line with past research highlighting potential inconsistencies of the symbolic centrality dimension of involvement as the context changes (Gursoy & Gavcar, 2003). Therefore, the symbolic centrality dimension was dropped, contributing to maintaining an adequate sample-size/parameters ratio for SEM analysis (Hair, Black, Babin, & Anderson, 2019). Based on Cronbach's alpha, other items were trimmed from both CPH and WI. The final WI scale includes 7 items, while CPH and AQWINT comprise 5 items.

Secondly, we proceed with running a confirmatory factor analysis (CFA) of the measurement model (MM), the results of which are presented in Table 2. To evaluate the Goodness-of-fit (GOF) of the MM, Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Residual (SRMR) are considered as indices of absolute fit. At the same time, Tucker Lewis Index (TLI) and Comparative Fit Index (CFI) are reported for incremental fit. Thresholds for the GOF indices were considered based on sample size (n) and on the number of observed variables in the model (m) according to Hair et al.'s guidelines (Hair et al., 2019).

Overall GOF of the MM on the whole sample is satisfactory ($\chi 2$ (553) = 441.13; df = 112; p < .001; $\chi 2$/df = 3.94; RMSEA = .07; CFI = .96; TLI = .95; SRMR = .04). Although some researchers argue that $\chi 2$ should not be significant (e.g., Sparks, 2007), this statistic tends to penalise larger samples and models with a higher number of observed variables (Hair et al., 2019). According to sample size (n = 553) and the number of observed variables (m = 17) of the MM applied, significant p-values for $\chi 2$ are expected (Hair et al., 2019). Construct Reliability (CR) and Average Variance Extracted (AVE) above the recommended thresholds for all latent constructs (CR > .7; AVE > .5; Costello & Osborne, 2005; Hair, Black, Babin, & Anderson, 2018). Moreover, all standardized factor loadings are significant and above the ideal threshold (.7), providing evidence of convergent validity for all scales (Hair et al., 2019). Discriminant validity is also supported by AVE exceeding inter-construct correlations (Hair et al., 2019).

Table 2 Results of the Confirmatory Factor Analysis (CFA)

Item description	Factor loading [a]	Average Variance extracted (%) [b] AVE	Construct Reliability [c] CR
Covid Phobia (CPH)			
PSYC1 The fear of coming down with coronavirus makes me very anxious.	0.91	67.9	.91
PSYC2 I am extremely afraid that by travelling me/my family might become infected by the coronavirus.	0.81		
PSYC3 News about coronavirus-related deaths causes me great anxiety.	0.88		
SOC1 After the coronavirus pandemic, I feel extremely anxious when I see people coughing.	0.76		
SOC4 The idea of travelling with big groups of people (e.g., by train or plane) makes me anxious	0.78		
Involvement with wine (WI)			
ENJ5 My interest in wine makes me want to visit wine regions	0.80	73.9	.95
ENJ4 My interest in wine has been very rewarding	0.86		
ENJ3 I have a strong interest in wine	0.84		
EXP4 wine represents a central life interest for me	0.92		
EXP3 I have invested a great deal in my interest in wine	0.92		
EXP2 Much of my leisure time is devoted to wine-related activities	0.90		
EXP1 People come to me for advice about wine	0.78		
Acquired wine Interest in lockdown (AQWINT)			
AQWI1 During the lockdown, I learned more about wine and winemaking	0.82	69.6	.92
AQWI2 During the lockdown, I became more passionate about wine	0.81		
AQWI3 During the lockdown, I watched and/or read online content (e.g., youtube videos, blogs) and/or documentaries about wine	0.87		
AQWI4 Since the beginning of the lockdown, I started following profiles of wineries/wine experts on social media	0.87		
AQWI5 Since the beginning of the lockdown, I started looking for more information about the wines I want to purchase	0.80		

n=553.
a. Based on standardized regression weights from AMOS.
b. AVE was computed based on the formula from Hair et al. (2019) as an indicator of convergent validity.
c. CR was computed based on Hair et al. (2019).

For step 2, the same GOF indices used for the MM are considered. Mediation effects (H2; H5; H6) are explored in addition to direct effects and are estimated through bootstrapping (500 bootstrapping intervals) with bias-corrected confidence intervals (C.I. = 95%). This technique is reported to be a reliable tool to test for indirect effects, providing intervals for estimates without relying on distribution (Ryu & Cheong, 2017).

Lastly, cross-cultural differences between France and Italy are further explored through a multigroup analysis (MGA). Before path differences between the two countries are tested, a preliminary multigroup confirmatory factor analysis (MCFA) is required to test for the measurement model to be consistent between the two groups. To do so, the fitting of the MM is first tested in the two samples separately to assess configural invariance. The latter condition is confirmed by the MM showing acceptable fitting for both groups (Italy χ^2 (412) = 361.77; df=112; p < .001; χ^2/df = 3.23; RMSEA = .07; CFI = .96; TLI = .95; SRMR = .04; France χ^2 (141) = 242.99; df=112; p < .001; χ^2/df = 2.17; RMSEA = .09; CFI = .94; TLI = .93; SRMR = .05). Moreover, the totally free multiple group model (TF) reveals acceptable fit (χ^2 (553) = 605.10; df=224; χ^2/df = 2.70; p < .001; RMSEA = .05; CFI = .96; TLI = .95; SRMR = .04). All standardized factor loadings are significant at p < .001 with values of .7 or above in both groups, supporting configural invariance. Metric invariance is also supported, confirming the equivalence of psychometric properties of the MM across groups (χ^2 test p= .625) (Hair et al., 2019). Subsequently, the fit of the constrained model (M1), where all effects are imposed to be equal between the groups, and of the unconstrained model (M0) are evaluated through a likelihood ratio test (LR). LR test compares the model with and without constraints by estimating them as nested models. The output produces a chi-square χ^2 statistic estimated according to equation 1 (see Ryu & Cheong, 2017):

Equation 1

$$\chi^2 \ = \ -2log\left[\frac{L\,(M_1)}{L\,(M_0)}\right] = \ \{-2log[L\,(M_1)]\} - \{-2\log[L\,(M_0)]\}$$

This step brings statistical evidence that the MM measures the same constructs in both the groups considered, so it is appropriate to proceed with multi-group comparisons. If the χ^2 statistic between the two models is significant, model estimates differ between the groups. Single paths are further tested to identify which effects significantly differ between groups. In light of the relevant size difference between the two groups, estimations have been weighted over groups' numerosity.

3. Results

wine tourism travel paths before Covid and post-lockdown travel intentions

Before the pandemic, most Italian and French wine tourists travelled to wine regions close to their area of residence and/or located in different regions and a remarkable share visited wine regions in other E.U. countries (34.2% in Italy; 34.8% in France). The average length of stay is slightly higher for French wine tourists, who tend to travel with their partner (59.6%), with friends (41.1%) or their family (29.8%), prefer private lodgings (41.1%) or hotels (34.4%) as accommodation, and declare a higher average budget compared to Italian tourists. However, this budget difference is not significant ($F_{(1, 508)} = 2.26$, $p = .13$). Italian wine tourists instead tend to prefer shorter trips (the 43.4 visits to a wine region no longer than one day) and usually stay at bed & breakfasts (38.4%) or hotels (29.3%). Similarly to French wine tourists, most Italians usually travel with their partner (55.8%) or friends (54.4%), but a considerably higher share travels with other wine lovers (28.9% in Italy; 17.0% in France). Table 3 summarize the descriptive statistics of the sample.

Table 3 wine tourism travel patterns before and after Covid-19

		Before covid				After covid*			
		Italy		France		Italy		France	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
Visited wine regions in:									
The same region where I live	Yes	306	74.3	88	62.4	133	41.0	29	33.3
A different region in my country	Yes	292	70.9	106	75.2	241	74.4	54	62.1
Another E.U. country	Yes	141	34.2	49	34.8	95	29.3	32	36.8
An Extra E.U. country	Yes	34	8.3	24	17.0	20	6.2	6	6.9
Length of stay	1 day or less	178	43.4	43	30.9	75	23.1	16	18.4
	2-3 days	156	38.0	57	41.0	145	44.8	29	33.3
	4-7 days	65	15.9	24	17.3	62	19.1	28	32.2
	≥ 7 days	11	2.7	15	10.8	25	7.7	14	16.1
Accommodation	Hotel	68	29.3	33	34.7	43	18.5	22	31.0
	Bed & Breakfast	89	38.4	13	13.7	89	38.4	6	8.5
	Private lodging	39	16.8	39	41.1	39	16.8	37	52.1
	Camping/village	9	3.9	5	5.3	8	3.4	3	4.2
	Agritourism	27	11.6	5	5.3	53	22.8	3	4.2
Traveling with partner	Yes	230	55.8	84	59.6	193	59.6	50	57.5
Traveling with friends	Yes	224	54.4	58	41.1	157	48.5	30	34.5
Traveling with family	Yes	75	18.2	42	29.8	51	15.7	24	27.6
Traveling with wine lovers	Yes	118	28.6	24	17.0	57	17.6	10	11.5
Traveling alone	Yes	33	8.0	13	9.2	24	7.4	8	9.2
Budget	(€)	431.0		513.0		539.9		622.3	

N=553: Italy n=412; France n=141.

Concerning wine holidays after mobility restrictions, the great majority of both French and Italian wine tourists plan wine travel in a different region and to stay longer than one day (44.8% 2-3 days in Italy; 65.5% % 2-7 days in France). Among Italian respondents, the interest in hotels dropped by 58% in favour of an *agriturismo* (+97 %; Table 3), typically family-run farms with a limited number of rooms. Nevertheless, this variation does not seem to be Covid-related as no significant difference in CPH emerged for wine tourists preferring an *agriturismo* (F (1, 322) = 1.5, p = .22) or hotel (F (1, 322) = 1.7, p = .20) for a post-lockdown wine holiday. Diversely, most French tourists still prefer private lodgings (+27%) and are interested in hotels (31.0%). Generally, the Italian sample shows a significantly higher intention to go on a wine holiday both long-term and after lifting mobility bans (Table 4).

Table 4 Long-term and short-term wine tourism intentions.

		1	2	3	4	5	6	7	Mean	St.Dev.	Anova F	p
Would like to visit a wine region in a future holiday (LTWTINT)	Italy	0.7	1.7	1.9	6.8	9.0	16.0	63.8	6.3	1.25	85.98[A]	0.00
	France	7.1	7.8	11.3	14.9	23.4	12.1	23.4	4.7	1.85		
Plans to visit a wine region after mobility bans are lifted (ALWTINT)	Italy	5.8	7.3	8.3	6.6	14.1	15.8	42.2	5.3	1.93	29.23	0.00
	France	12.8	11.3	14.2	12.1	17.0	11.3	21,3	4.3	2.02		

n=553. 1=strongly disagree; 7=strongly agree
[A] The assumption of Homogeneity of Variance is violated, Welch Anova is used.

Structural model results

The structural model (SM) is first tested on the whole sample (Figure 1). Goodness-of-fit statistics reveal a satisfactory fit to the data (χ^2 (553) = 605.81; df = 175; p < .001; χ^2/df = 3.46; RMSEA = .07; CFI = .95; TLI = .95; SRMR = .04). The model shows a remarkable predictive power, explaining 41% and 42% of LTWTINT and ALWTINT variance respectively. Involvement with wine is a significant antecedent of long-term wine tourism intentions (LTWTINT; β = .57; p < .001), which is the main predictor, followed by willingness to support national wineries (SUPLOCW; β = .15; p < .001). As regards the willingness to go on a wine holiday after the lifting of mobility restrictions (ALWTINT), it is significantly predicted by both LTWTINT (β = .52; p < .001), and by AQWINT (β = .11; p = .04). A worse economic situation following the pandemic (WORSEINC) positively affects ALWTINT as well, although to a lesser extent (β = .09; p = .01). Interestingly, neither WI nor SUPLOCW are

predictors of ALWTINT. Covid-related fear and anxiety (CPH) have a limited negative impact on post-lockdown wine tourism intentions (CPH - ALWTINT β = - .07; p = .05) but no significant effect on LTWTINT. Finally, as expected, WI is a significant antecedent of AQWINT in lockdown (β = .75; p < .001). While the relationship between WI and LTWTINT is not significantly mediated by AQWINT, the effect of WI on ALWTINT is fully mediated by AQWINT (direct effect β = .07; p = .28; indirect effect β = .09; p = .04). Regarding mediation of CPH among LTWTINT and ALWTINT, a significant indirect effect was found (β = - .01; p = .04), although having a limited size. Table 5 summarizes the results obtained from the SEM analysis for all the hypotheses postulated.

Correlations, the mean and standard deviation of the variables included in the path diagram are proposed in Table 6.

Table 5 Summary of hypotheses tested and related outcomes

| Hypothesis	Outcome
H1. Covid phobia impacts negatively on post-lockdown wine tourism intentions.	Partially supported
H2. Covid phobia mediates the effect of future wine tourism intentions on post-lockdown wine tourism intentions**.**	Not supported
H3. Involvement with wine positively affects post-lockdown wine tourism intentions.	Not supported
H4. Involvement with wine positively affects future wine tourism intentions**.**	Supported
H5. Acquired interest in wine mediates the effect of involvement with wine on post-lockdown wine tourism intentions.	Supported
H6. Acquired interest in wine mediates the effect of involvement with wine on future wine tourism intentions.	Not supported
H7. Acquired interest in wine positively affects post-lockdown wine tourism intentions.	Supported
H8. Acquired interest in wine positively affects long-run wine tourism intentions.	Not supported
H9. Willingness to support local wineries positively affects post-lockdown wine tourism intentions.	Not supported
H10. Willingness to support local wineries positively affects long-run wine tourism intentions.	Supported

Note: n=553.

Table 6 Constructs correlations and descriptive statistics

	AQWINT	CPH	WI	ALWTINT	LRWTINT	WORSEINC	SUPLOCW
Acquired interest in wine during the lockdown (AQWINT)	3.5 (1.77)						
Covid-related fear and anxiety (CPH)	0.058	3.5 (1.63)					
Involvement with wine (WI)	0.662	0.058	5.2 (1.35)				
wine tourism intentions after lockdown (ALWTINT)	0.404	0.004	0.494	5.1 (2.02)			
Future wine tourism intentions (LRWTINT)	0.466	0.102	0.640	0.624	5.9 (1.58)		
Worse income after Covid (WORSEINC)	0.109	0.106	0.149	0.171	0.131	0.3 (0.46)	
Willingness to support local wineries (SUPLOCW)	0.129	0.041	0.123	0.139	0.194	0.050	6.0 (1.35)

Note: Mean (Std. Dev.) on the diagonal.

Figure 1 Path diagram with standardized regression coefficients: SEM results on the
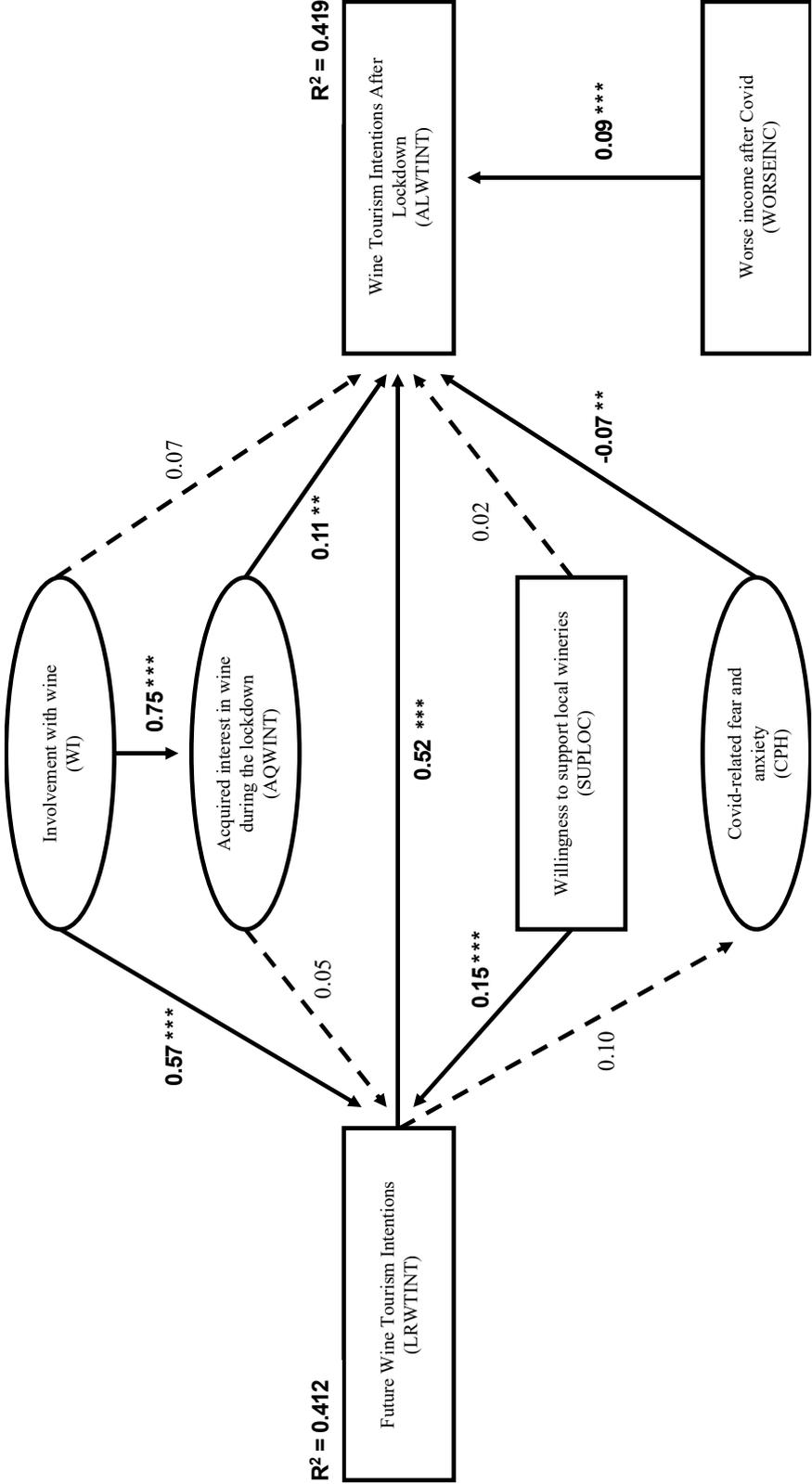
whole sample

Note: n = 553; ***p < .01; **p < .05; *. Significant paths are represented with a continuous line and the related structural weights are reported in bold.

Multigroup comparisons between French and Italian wine tourists are conducted to check for cross-cultural differences in single paths of the model. Table 7 summarizes the key descriptive statistics of the two sub-samples compared through the multigroup analysis (i.e., France and Italy).

Table 7 Mean and standard deviation of the variables included in the SEM by group

|	France (n=141)		Italy (n=412)	
	Mean	**St. Dev**	**Mean**	**St. Dev**
Involvement with wine (WI)	4.9	1.36	5.4	1.32
Acquired interest in wine during the lockdown (AQWINT)	3.0	1.79	3.6	1.73
Covid-related fear and anxiety (CPH)	3.4	1.46	3.7	1.54
wine tourism intentions after lockdown (ALWTINT)	4.3	2.06	5.3	1.93
Future wine tourism intentions (LRWTINT)	4.7	1.85	6.3	1.25
Willingness to support local wineries (SUPLOCW)	6.1	1.24	5.9	1.39

Note: n=553; Italy n=412; France n=141.

The effect of AQWINT on ALWTINT is found to differ significantly between France and Italy ($\chi 2$ (351, 553) = 8.01, p < .001). In particular, the effect for Italian respondents is positive and significant (β = .20; p < .001), while it is negative and non-significant for the French sub-sample (β = - .18; p = .13). Slightly significant differences are found also for the effect of CPH and of WORSEINC on ALWTINT ($\chi 2$ CPH (351, 553) = -.22, p = .07; $\chi 2$ WORSEINC (351, 553) = 2.65, p = .09). Similarly to the former effect, the two paths are not significant in the French sub-sample (CPH-ALWTINT France β = .04; p = .48; WORSEINC-ALWTINT France β = - .05; p= .86) but they are for the Italian one. Particularly, CPH has a significant negative impact on ALWTINT (CPH-ALWTINT Italy β = - .11; p < .001) while a worse income (WORSEINC) positively predicts short-term wine tourism intentions (WORSEINC-ALWTINT Italy β = .51; p < .001). Results of multigroup comparisons are summarized in Figure 2.

Country-moderated mediation effects have been further explored. No significant differences emerged for CPH mediation between the two groups ($\chi 2$ (352, 553) = 3.42, p = .18). Similarly, the mediation of AQWINT on the effect of WI on LTWTINT is not significantly different between France and Italy ($\chi 2$ (352, 553) = 3.80, p = .15). A significant difference exists for the mediation of AQWTINT on WI and ALWTINT ($\chi 2$ (352, 553) = 11.39, p < .001). Particularly, the indirect effect of WI on ALWTINT is positive for Italian respondents while it

is negative for French wine tourists, despite poorly significant (Italy β = .15; p < .004; France β = -.15; p =.092).

Figure 1 Multigroup comparisons between Italy and France
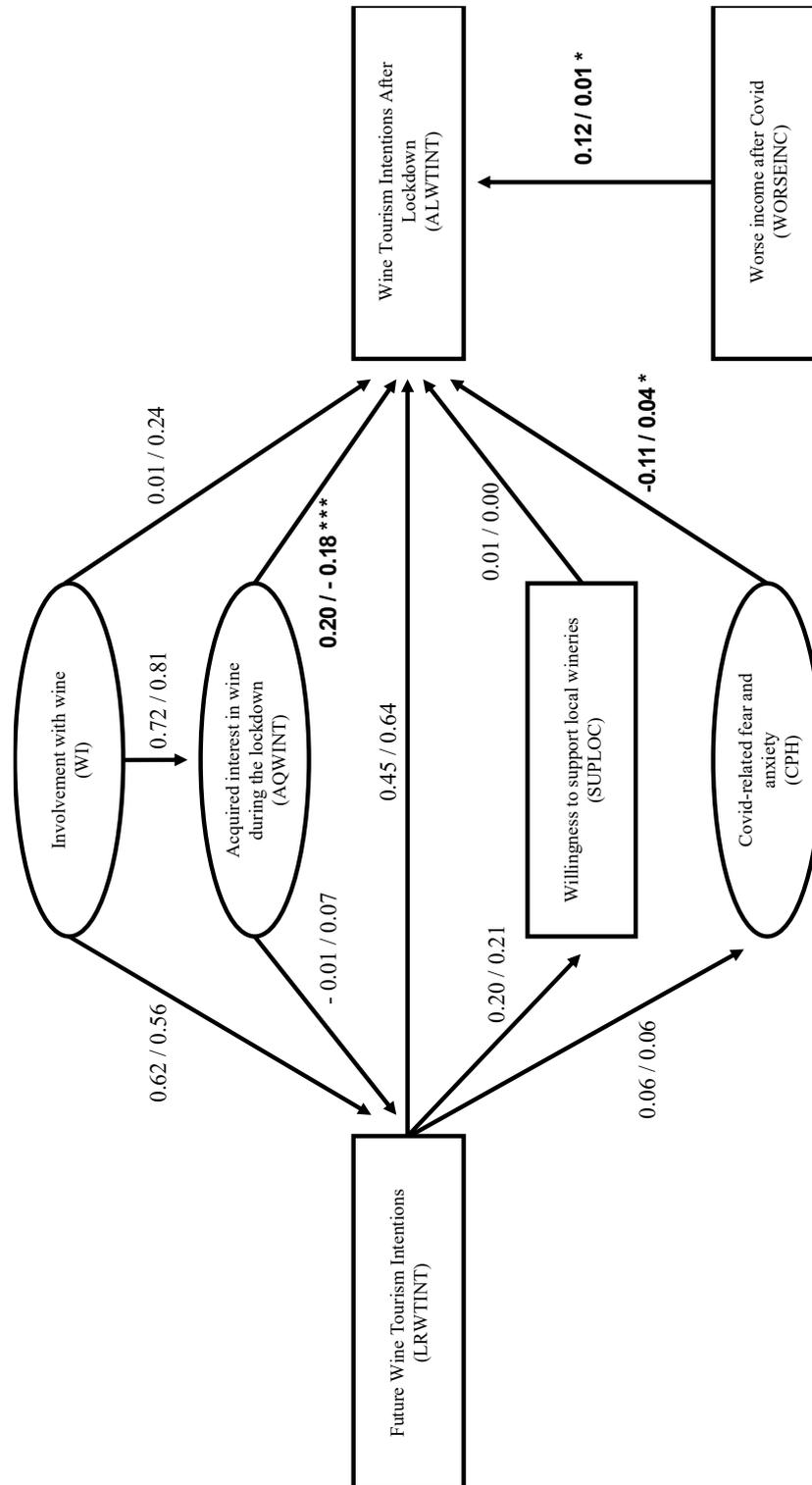
Note: n = 553; ***p < 0.01; **p < 0.05; *p < 0.1. The first result refers to Italy, the second to France. Significant results are reported in bold.

5. Discussion and Conclusion

The present study is among the first to provide insights on how an unprecedented event like the pandemic affected wine tourists' behavioural intention focusing on two major wine tourism actors, Italy and France, which have been severely hit by Covid-19. Generally, this analysis suggests the pandemic boosted wine tourism intentions instead of limiting them. Particularly, a greater share of wine tourists from both countries is willing to travel outside their region of residence after the lockdown, either to a different region or another European country. Diversely, the share of tourists willing to travel to a neighbouring wine region is significantly smaller. Both average lengths of stay in the wine region and the planned budget for a wine holiday (+25.3% for Italy; +21.1% for France) record an increase compared to pre-Covid, despite a considerable share of respondents declaring a worse economic situation following the pandemic.

A switch from hotels to *agriturismo* emerged in the Italian sample, which does not appear to be connected to fear of contagion. Further research is required to explore the reasons behind such behavioural changes while considering post-lockdown travel patterns.

Accordingly, Covid-induced fear and anxiety do not seem to impact wine tourism intentions after the lockdown despite data being collected after the first wave of infection, i.e., when information on the virus and potential treatments was still scarce. Indeed, the model provides evidence that wine tourists planning a wine holiday after the lockdown are people who already intended to do it in a future holiday and who dedicated their extra free time to wine during the lockdown. Accordingly, CPH does not mediate the relationship between future wine tourism intentions and planning a post-lockdown wine holiday. The low impact of Covid phobia is unexpected considering that the average wine tourist is older than regular tourists and the greater Covid-mortality rate for the elderly (Bhopal & Bhopal, 2020). However, the recent literature provides evidence supporting this non-significant relationship in tourists' behaviour (e.g., Luo & Lam, 2020). This result is reasonably connected to a safer perception of rural destinations (like wine regions) than city ones (G. Song et al., 2019). This hypothesis is reinforced by recent findings showing how the threat of Covid intensifies consumers' tendency to avoid crowding (I.-J. Park, Kim, Kim, Lee, & Giroux, 2021).

Moreover, Villacé-Molinero et al. (2021) highlighted the impact of trust in official communications on the likelihood to stick to travel plans. Both are essential factors to be considered by future research on the topic. However, it should be noted that the Covid-effect is remarkably higher for the Italian sample, where its direct effect on wine tourism intentions

after the lockdown is negative and significant (β - .11, p < .01). At the same time, it is non-significant for French respondents. This outcome may be related to differences in the severity of the first wave of Covid-19 infections between countries. Indeed, Italy was among the worst-hit nations, which could explain the stronger fear and anxiety that emerged among the population during data collection.

Country differences also emerged for the effect of AQWINT on the same dependent variable, showing a significant direct effect only for the Italian subsample (β .20; p < .001). The same variable is a mediator of WI on post-lockdown wine tourism intentions for both French and Italians while playing a more significant and positive role for the latter.

The fact that dedicating time to wine during the lockdown significantly affects post-lockdown wine tourism intentions suggests that planning an offer of wine-related content, both online and offline, can help attract wine tourists. Given the prolonged duration of the Covid pandemic, this finding highlights the relevance of virtual wine content and social-media communication as strategic tools to reach a wider audience and retain existing consumers during infection peaks.

Moreover, they can also play a long-term marketing role allowing the time and financial investment for wine tourists approaching an unknown winery and wine region to be reduced. Therefore, there is a need for studies exploring the antecedents of interest in virtual wine tourism to fully understand their potential role and target and provide valuable insights to sector stakeholders.

Such communication activities should be planned and targeted considering country to country differences. Indeed, while Italy dedicating time to wine is an antecedent of short-term wine tourism intentions independently from involvement with wine, its effect is exclusively connected to the latter variable in France.

Furthermore, the significant mediation of AQWINT in the effect of enduring wine involvement on wine tourism intentions supports the relevance of situational involvement in enhancing the predictive power of WI, as past studies suggest (Brown et al., 2007; Havitz & Mannell, 2005). This finding paves the way to further research exploring the role of situational involvement in predicting wine tourism intentions and behaviour, providing valuable hints to practitioners for planning marketing campaigns.

Regarding long-term wine tourism intentions, involvement with wine is confirmed to be a key antecedent (J. Bruwer & Buller, 2013; Johan Bruwer & Lesschaeve, 2012; Roe & Bruwer, 2017), jointly with the willingness to support local wineries. The last finding is supported by the outstanding share of day-trippers in the sample and is in line with proximity being a key

driver of wine tourism (Getz & Brown, 2006), representing essential information for planning marketing and communication strategies.

Moreover, it highlights the vital role wine tourism can have as a form of sustainable tourism, answering rising concerns of tourism growth in the context of climate change (Gössling & Lund-Durlacher, 2021).

Unexpectedly, solidarity with local winemakers after the Covid-19 crisis does not impact intentions to go on a wine holiday after the lockdown. Nevertheless, the model also evidences that solidarity is a positive driver of long-run wine tourism intentions.

Specifically, results suggest that solidarity is not a driver of wine tourism intentions in the short run, i.e., after the first national lockdown. Perhaps, a shock as the pandemic implies having too much at stake at a personal level to prioritize collective wellbeing since the perceived personal losses associated with a potential infection include life-threatening health issues.

On the other hand, solidarity is a relevant antecedent of wine tourism intentions on a broader scale, drawing attention to the strong connection between the wine tourism phenomenon and the support to rural communities through direct sales. Wineries and tourism stakeholders should avail of consumers' desire to support local businesses to attract travellers outside major city destinations, designing itineraries and experiences in rural areas. Finally, the worsening economic situation seems to encourage wine holidays, especially for the Italian market: in the latter subsample, the effect is significant and not negligible (β 0.12; $p < .01$). However, some limitations are present, most of which are connected to operational difficulties in collecting data. Notably, the significant difference in both long-term (FUTWTINT) and after lockdown (ALWTINT) intentions to partake in wine tourism emerged between the French and Italian sample suggests the presence of heterogeneity between the two populations, which should be accounted for in results interpretation.

Whilst offering a comprehensive overview of a still unexplored topic, the present study comes with some limitations, mostly connected to operational difficulties in collecting data. Notably, a relevant size difference between the two subpopulations exists. In this respect, data analysis relied on weighted estimates based on the French and the Italian group sizes. Furthermore, some heterogeneity in terms of wine tourism intentions is also present between the two countries. The nature of such country-based behavioural differences calls for further research, while the current study results represent an exploratory step forward to their comprehension.

The remarkable standard deviation observed for WI highlights the present sample includes wine tourists possessing different degrees of interest and involvement with wine: a characteristic that may impact their future behavioural intentions. Future studies should address

this issue and analyse group differences in wine tourism behaviour after the Covid outbreak based on respondents' profiles as wine consumers.

To conclude, the pandemic has deeply impacted tourism dynamics, inducing changes in travellers' behaviour that call for fast, innovation-based responses (Villacé-Molinero et al., 2021). Moreover, the emergence and re-emergence of lethal viruses have become increasingly frequent and worrying in the last decade, notably for the ease of transmission fostered by international travel (Houghton, 2019). Covid itself is still undefeated, and new viral variants are emerging. Therefore, the findings of this study provide wine tourism stakeholders with relevant information on how such unprecedented circumstances can impact wine tourists' behaviour. Such results represent valuable hints on how to plan a recovery strategy effectively. Academically, this research represents important progress to wine tourism research as, differently from many past studies, it provides a comprehensive view of behavioural intentions by simultaneously modelling positive and negative drivers of intentions: an improvement which is very much needed to avoid undesired myopias connected to the vital role played by constraints in behavioural research (Cho, Bonn, & Brymer, 2014).

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Chapter 3 – Glass half-full? A PLS-SEM approach to explore positive and negative effects of Covid-19 on wine tourism intentions[5]

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Abstract

The Covid-19 pandemic caused a global-scale crisis that severely compromised worldwide tourism. wine tourism is no exception. This study adopts a comprehensive approach to explore how the most relevant positive drivers and negative factors connected to the Covid-19 pandemic jointly shape wine tourism intentions through PLS-SEM. The analysis relies on a representative panel of USA wine tourists. Findings reveal that risk-attitude negatively impacts wine tourism intentions, and Covid-Phobia amplifies it. They also highlight the predictive relevance of situational involvement and provide updated information on wine tourists' profile. Academically, this study represents an advance in understanding how positive and negative drivers act synergically in affecting travel intentions. It contributes to understanding the role of travel-related risk attitude during health crises and the relationship between wine involvement and travel intentions. Results constitute critical information to practitioners and destination management operators (DMOs) for improving their resilience under similar circumstances.

Keywords: wine tourism intentions; PLS-SEM; Covid-19; risk attitude; situational involvement

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1. Introduction

The Covid-19 pandemic disrupted most of the world's economic and social systems worldwide (Villacé-Molinero, Fernández-Muñoz, Orea-Giner, & Fuentes-Moraleda, 2021). In this context, tourism was severely affected by the combination of legal limits imposed by many governments like lockdowns, stay-at-home orders, capacity limits, non-essential business shutdowns (Chinazzi et al., 2020), and consumer fear of contracting, spreading SARS-Cov2, or having to quarantine after potential. According to the United Nations World Tourism Organization (UNWTO 2020), no country has avoided the economic drawbacks of the pandemic with a global dramatic drop in international tourism arrivals (-56% in the first six months of 2020) and a knock-on impact on tourism-related businesses and jobs. The extent of the damage is three times higher than the one caused by the 2009 economic crisis (UNWTO 2020). Covid-19, jointly with the Severe Acute Respiratory Syndrome (SARS), represents one of the two major crises the tourism sector has faced(Ying, Wang, Liu, Wen, & Goh, 2020).

The Americas are no exception, recording a 47% decline in international tourism arrivals only in the first six months of 2020 (UNWTO, 2020). Before Covid-19, the USA had the highest tourism total contribution to the national gross domestic product (GDP) among G20 countries. In 2019, tourism accounted for 10.4% of the national GDP, corresponding to 1,870 billion US$. In 2020, though, it dropped by 41%, decreasing to 1,104 billion US$ (World Travel and Tourism Council, 2021). Therefore, domestic tourism flows did not compensate for the dramatic reduction of international visitors. Domestic tourism flows have indeed been penalized by between and within-states limitations to mobility. Travel and tourism-related jobs, moreover, recorded a -18.5% drop. wine tourism destinations were also impacted, not least among them California and Oregon, which had one of the strictest anti-Covid policies among all the states. The majority of the wineries experienced a turnover decrease in wine tourism from 10% up to 80%, with most California wineries declaring a 50%-80% loss[6]. These are concerning data since wine tourism has long been acknowledged as a strategic tool for marketing and direct sales for wineries (Hall, Sharples, Cambourne, & Macionis, 2009), for creating brand loyalty (Bruwer, Coode, Saliba, & Herbst, 2013), as well as a key tool for local and rural development (Cavicchi & Santini, 2014). Additionally, the phenomenon has gradually scaled and passed from being a domestic driven market to expanding internationally, becoming increasingly tied to tourism flows from foreign countries.

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[6] Impact of Covid-19 on wine Tourism in USA, Winetoruism.com. https://www.winetourism.com/impact-covid-19-wine-tourism/usa/

Nevertheless, lockdowns and home confinement have paradoxically limited people's freedom of action physically and spatially. Still, they also offered people more time to freely use to engage in leisure activities (Gammon & Ramshaw, 2020). Unsurprisingly, many of these leisure activities encompassed online entertainment and social media content, as well as online courses, which have boomed. In a sense, this can be considered a positive effect of the lockdown for some industries. At the same time, as in-person activities became limited, some wineries presented wine tastings as an attractive alternative to other more Covid risky activities, with tasting possible to conduct in open air and reservations limiting the number of other consumers present at the tasting.

Despite the undeniable impacts of Covid-19 on the wine industry, limited research has explored how Covid-19 impacted wine tourism intentions, which are a crucial determinant of their behaviour (Ajzen, 1991). The Covid-19 pandemic is still affecting consumer behaviour, and new variants of the virus are spreading, threatening the protection granted by vaccines and exposing worldwide populations to alternate periods of restrictions. Therefore, understanding how the pandemic impacts wine tourists' travel intentions could provide helpful insights to both sector stakeholders and practitioners to handle the restart properly. Indeed, restarting tourism is critical for countries where the sector is economically highly influential (Villacé-Molinero et al., 2021), like the USA. The present study aims at filling this gap by exploring how Covid-19 affected wine tourism intentions while accounting for both positive and negative effects.

Finally, the study also contributes to improving comprehension of the role of risk in travel decisions, which following Covid-19 has become paramount to evaluate changes in travel behaviour (Luo & Lam, 2020; Villacé-Molinero et al., 2021).

2. Background

As previously argued, the Covid-19 pandemic has deeply impacted tourism dynamics economically, physically, and psychologically. Most of these consequences are expected to affect tourists' intentions and, consequently, their travel behaviour (Villacé-Molinero et al., 2021).

Bearing in mind the life-threatening nature of the illness caused by Covid-19, one of the critical aspects to be considered is the risk connected to travelling. Although the definition of risk is fuzzy (Hillson & Murray-Webster, 2007), it can be identified as a state of uncertainty, which implies some consequences (Hillson, 2009).

Willingness to take risks depends on how risk is perceived, which will lead people to evaluate expected gains and losses and to adjust their risk-taking behaviour accordingly (Sarin &

Weber, 1993). Consequently, having children is expected to increase perceived losses in a context where life is at stake as the Covid-19 pandemic, thus reducing individuals' propensity to take risks. Other aspects that may affect risk perception and risk-taking behaviour are past experiences and context-related factors such as official communications (Neuburger & Egger, 2020). Based on this trade-off, people adjust their risk-taking behaviour and assume a given attitude towards risk (Hillson & Murray-Webster, 2007). Attitude is indeed defined as a "state of mind, mental view or disposition with regard to a fact or state" (Hillson, 2009, p. 2). Recent research pointed out how risk attitude can affect travel intentions in times of pandemics (Luo & Lam, 2020). Notably, the authors applied Zhu & Deng risk attitude scale (2020) to explore its effect on the intention to travel to "Travel Bubble" destinations jointly with fear of Covid-19 and travel anxiety. Their results show that risk attitude negatively impacts travel intentions while amplified by fear and anxiety. In the pandemic scenario, the primary source of risk is indeed associated with Covid-19 infection. With the rapid spread of the Covid-19 virus, the severity of the Sars-Cov2 illness and the constant exposure to news on new cases and Covid-related death, individuals have been exposed to an increasing state of fear and anxiety (Arpaci, Karataş, & Baloğlu, 2020). Fear and anxiety are two distinct but associated emotions: fear is defined as an emotion arising in the presence of danger, pain or harm (De Hoog, Stroebe, & De Wit, 2008), while anxiety encompasses "feelings of tension, worried thoughts and physical changes" (APA) emerging in response to fear (Clark & Beck, 2011). Since the beginning of the pandemic, several researchers have developed scales to capture these emotions (e.g., Ahorsu et al., 2020). Arpaci et al. (2020), though, have designed and validated a diagnostic tool that embodies both Covid-related fear and anxiety: the Covid Phobia scale. Specifically, the scale includes four dimensions: the *economic* dimension regarding food safety issues, the *psycho-somatic* dimension regarding physical modifications induced by fear and anxiety, the *psychological* dimension, and the *social* dimension. The latter dimension is particularly relevant for tourism since travelling implies multiple and uncontrolled interactions with potentially infected people. Studies on human behaviour during pandemics (Taylor, 2019) highlight that people who experience greater anxiety, which is a consequence of fear (Clark & Beck, 2011), are more likely to protect themselves by getting vaccinated. Consequently, being vaccinated is expected to impact CPH positively.

Nevertheless, rural destinations are argued to be generally perceived as safe places to travel in times of shock, such as terrorist threats (Song, Khan, & Yang, 2019), and also during pandemics thanks to a key characteristic: differently from city destinations, rural ones allow

tourists to avoid crowding (Park, Kim, Kim, Lee, & Giroux, 2021). Therefore, we postulate the following hypotheses on the negative psychological effects of the pandemic:

H1. Risk attitude **(**RA) negatively affects future wine tourist intentions (FUTWTINT)

H2. Covid phobia (CPH) positively affects future wine tourist intentions (FUTWTINT)

H3. Risk attitude **(**RA) competitively mediates the relationship between CPH -> FUTWTINT

H4. Being vaccinated (vacc) positively impacts Covid phobia (CPH)

H5. Being a family with children (famchild) positively impacts risk attitude **(**RA)

But "the COVID-19 pandemic is far more than a health crisis: it is affecting societies and economies at their core" (UNPD, 2020). Indeed, it had massive disruptive consequences for worldwide economies, causing the worst economic crisis since World War II (WorldBank, 2020). In this scenario, many people lost their jobs, resulting in a severe employment rate reduction (BBC, 2020) and a worsening family income. Consequently, reducing the budget destined for vacations may represent a limiting factor to travel. On the other hand, people who did not lose their jobs often experienced higher pressure and workloads, increasing the number of hours worked per day (The Guardian, 2021). Before Covid-19 appeared, Americans worked more hours per week than most countries (Bick, Brüggemann, & Fuchs-Schündeln, 2019) and were hardly using their assigned day-offs (Robert Wood Johnson Foundation & Harvard School of Public Health, 2016). With companies eager to recover from the economic losses caused by government-imposed restrictions, this pressure is likely to increase, inducing people to give up their vacation days. In line with these observations, we postulate as follows:

H6. A reduction of budget available to travel (red_$trav) negatively impacts future wine tourist intentions (FUTWTINT)

H7. A reduction of the time available to travel (red_ttrav) negatively impacts future wine tourist intentions (FUTWTINT)

On a different note, the pandemic may have paradoxically produced positive effects. Although lockdowns and home confinement have physically limited people's freedom, it has also given them additional free time to engage, among others, in leisure activities (Gammon & Ramshaw, 2020). For example, many people started cooking and baking or attended online courses. Indeed, as the whole population was forced to stay at home, many of these leisure activities have been conveyed by technology (Gammon & Ramshaw, 2020), and the use of social media

and online shopping has increased significantly after the Covid-19 pandemic (UNCTAD, 2020). wine tourism actors have adapted to these profound context changes trying to overcome the barriers of the pandemic by implementing delivery services and offering wine-related online content such as online wine tastings (Szolnoki, Lueke, Tafel, & Blass, 2021). According to the literature, wine tourists are " any visitor of a region, either a day-tripper or staying overnight, that engages with wine and the winescape" (O'neill & Palmer, 2004). A common denominator in wine tourism studies is indeed involvement with wine (WI), which is generally recognised as an essential antecedent for partaking in wine tourism (Brown, Havitz, & Getz, 2006; Getz & Carlsen, 2008; Nella & Christou, 2014; Sparks, 2007). The concept of involvement has been introduced by Zaichkowsky (1985, p. 342) and identifies "A person's perceived relevance of a product/service based on inherent needs, values, and interests". Therefore, wine tourists possess a degree of interest in wine and have plausibly dedicated their free time while in lockdown to explore their interest, pushed by their underlying involvement with the product. Such acquired interest in wine during the lockdown is, therefore, the result of situational involvement induced by the profound Covid-related context changes and can become a driver of the intention to visit a wine region. Indeed, interests are drivers of intentions (Hong, Hwang, Liu, Ho, & Chen, 2014).

Although the literature distinguishes several types of involvement (Laurent & Kapferer, 1985; Lockshin & Spawton, 2001; Ogbeide & Bruwer, 2013), enduring involvement (also called ego-involvement) is deemed the most relevant for tourism research (Brown et al., 2006). As the name suggests, enduring involvement represents a general and permanent concern with a given product or service (Laurent & Kapferer, 1985). Although several scales have been applied in wine tourism research to capture involvement (see Giampietri, Donà Dalle Rose, & Morlin, 2018; Ogbeide & Bruwer, 2013; Sparks, 2007), Brown et al. (2006) developed a 15-items tool to capture ego-involvement with wine – the WIS scale – based on past research, which specifically designed for the wine tourism context. Specifically, the WIS tool includes three key dimensions: *symbolic centrality*, *expertise* and *enjoyment*. In light of these considerations, enduring involvement with wine (WI) is expected to boost wine tourism intentions, as well as to push wine tourists to dedicate their leisure time to wine while in lockdown, and we hypothesise as follows:

H8. Enduring involvement with wine (WI) positively affects future wine tourism intentions (FUTWTINT)

H9. Enduring involvement with wine (WI) positively affects acquired interest in wine during lockdowns (AQWINT)

H10. Acquired interest in wine during lockdowns (AQWINT) positively affects future wine tourism intentions (FUTWTINT)

H11. Acquired interest in wine during lockdowns (AQWINT) complementary mediates the relationship between WI -> FUTWTINT

To conclude, though, we expect the negative effects of Covid-19 to impact the positive effects on future wine tourism intentions coming from enduring involvement with wine and acquiring an interest in wine during lockdowns. Indeed, the magnitude of the concerns created by the pandemic goes beyond any pre-existing personal interest. Particularly, we test the following hypotheses:

H12. Covid phobia (CPH) competitively mediates the relationship between WI -> FUTWTINT

H13. Covid phobia (CPH) and risk attitude (RA) competitively mediate the relationship between WI -> FUTWTINT

H14. Covid phobia (CPH) and risk attitude (RA) competitively mediate the relationship among and WI -> AQWINT and FUTWTINT

3. Materials and Methods

Survey and data collection

Data for the present study have been collected through a structured survey delivered online to a stratified sample of US wine tourists (N=399), intended as people who either visited a wine region and/or attended a wine festival at least once. Specifically, 201 wine tourists are residents in California, while 198 are from Oregon. The sample has been selected to guarantee representativeness based on gender and age. People being below the legal drinking age are therefore excluded. The structured survey included four sections: section includes all the scales, section 2 addresses pre-Covid wine tourism patterns, and section 3 contains sociodemographic information. The study included the following scales: Involvement with wine (WI); Covid Phobia (CPH); Risk Attitude (RA), acquired interest in wine in lockdown(s) (AQWINT) and wine tourism intentions in the next 12 months (FUTWTINT).

The original CPH scale was developed by Arpaci et al. (2020) for diagnostic purposes, and it included four dimensions: psychological, psycho-somatic, economic, and social. Only the social and psychological dimensions were considered relevant for the present research context,

i.e., tourism, while the psycho-somatic and the economic dimensions were excluded. Specifically, the economic dimension was dropped as it referred to food security issues, which were a greater concern only at the early stage of the pandemic. Similarly, the psycho-somatic dimension focused on medical symptoms connected to the presence of phobia as a medical condition. Since the present study's aim is to capture Covid-related fear and anxiety connected to travels rather than diagnosing Covid-19 phobia, the latter dimension was also neglected. We then proceeded to select the three most relevant items for the social and the psychological dimensions based on factor loadings and on their applicability to the study. Some of them were slightly adapted to fit the research context. The final six-item scale included the following statements: "*The fear of coming down with coronavirus makes me very anxious*", "*I am extremely afraid that by travelling me/ my family might become infected by the coronavirus*", "*News about coronavirus-related deaths causes me great anxiety*" for the psychological dimension, and "*After the coronavirus pandemic, I feel extremely anxious when I see people coughing*" "*The idea of travelling with big groups of people (e.g. by train or plane) makes me anxious*", "*The fear of coming down with coronavirus seriously impedes my social relationships*". The AQWINT 5-items scale was taken from Gastaldello, Livat & Rossetto (n.d.). The following statements assessed it: "*While in lockdown, I deepened my knowledge about wine*", "*I feel that during lockdown(s), I became more passionate about wine*", "*While in lockdown, I watched and/or read online content (e.g. YouTube videos, blogs) and/or documentaries about wine*", "*While in lockdown, I started following profiles of wineries/wine experts on social media*", and "*While in lockdown, I started looking for more information about the wines I want to purchase*". Future wine tourism intentions (FUTWTINT) were captured through a single item adapted from Sparks (2007): "*Considering COVID-19 mobility restrictions, I am very likely to plan a trip to a wine region in the next 12 months*". WI scale was taken from Brown et al. (2006), while for RA we adapted Zhu & Deng's (2020) 3-items scale. Although several scales for involvement can be found in the literature (e.g., Mittal, 1989), Brown et al.'s scale was deemed the most appropriate for the study as it was explicitly developed for wine-related travel. Similarly, Zhu & Deng's scale was selected since it was designed for tourism applications. RA scale is inverted, so higher scores represent a lower risk attitude.

All the scales have been adapted from existing literature and are measured through 7-points Likert scales ranging from 1 – *strongly disagree* to 7 – *strongly agree*.

Section 1 also captured information on Covid-related economic constraints to partaking in wine tourism (ECONSTR) through the following questions: "*Has the time you plan to spend*

on travel changed following the Covid pandemic?", "Has the budget you plan to spend on travel changed following the Covid pandemic?". ECONSTR were proposed as multiple-choice questions with three answer options: *reduced*; *unchanged*; *increased.*

The variables captured in section 2 captured the location of the wine regions visited before Covid, the usual length of stay and accommodation. In the socio-demographic section (section 3), the household economic situation was captured through descriptive sentences adapted from the Eurostat survey on living conditions adding one level to capture the wealthier population. Specifically, the following four levels were used: "*My monthly household income usually allowed me to cover expenses and to satisfy most my/our desires*" for good income*; "My monthly household income usually allowed me to cover expenses and to save part of it*" for sufficient income, "*My monthly household income was usually just sufficient to cover expenses and I/we could hardly save part of it*" for just sufficient income, and "*My monthly household income is usually not enough to cover expenses*" for insufficient income.

Descriptive analysis

A descriptive analysis is run on the whole sample (n=399) using IBM SPSS 27. Since a minor share of surveys was incomplete for only a few socio-demographic information, we decided to retain them for the descriptive examination. Respondents are residents of the US, 49.6% of whom is from Oregon, and 50.4% is from California. All of them are wine tourists who travelled to a wine region or attended a wine festival at least once, and the great majority did it in the last three years (81.2). Males and females are equally represented (50.3% males; 49.4% females) and belong to the following age groups: 21-29 years old (16.3%), 30-39 years old (19.5%), 40-49 years old (19.0%), 50-59 years old (13.0%), 60-69 years old (14.5%), over 70 years old (17.5%). Most respondents are married or living with their partner (65.9%), with 32.8% of them forming a household with at least one child. Most respondents enjoy a good financial situation (49.1%), which is described as follows "*My monthly household income usually allowed me to cover expenses, save part of it and satisfy most of my/our desires*". The second most frequent income group is *sufficient* (34.1%), corresponding to the following statement "*My monthly household income usually allowed me to cover expenses and to save part of it*", followed by the *just sufficient* group (14.5%, represented by the sentence "*My monthly household income was usually just sufficient to cover expenses and I/we could hardly save part of it*"). Although the household income has not changed following the Covid-19 pandemic for the greatest share of respondents, 32.3% declared a worse financial situation. Finally, the level of schooling is the following: 19.6% is a post-graduate, 11.1% has a Graduate

degree, 32.7% has a bachelor's degree, 24.4% has an associate or college degree, and 12.3% interrupted their education at high school (Table 1). Although most respondents declare to be vaccinated, 20.8 % is not.

Table 1 Sociodemographic profile of the respondents

	Frequency	Valid %		Frequency	Valid %
State (n=399)			**Gender (n=399)**		
Oregon	198	49.6	Male	197	50.3
California	201	50.4	Female	201	49.4
Age (n=399)			Other	1	0.3
21-29	65	16.3	**Education (n=398)**		
30-39	78	19.5	High school or lower	49	12.3
40-49	76	19.0	Associate degree/college	97	24.4
50-59	52	13.0	Bachelor's degree	130	32.7
60-69	58	14.5	Graduate degree	44	11.1
over 70	70	17.5	Postgraduate	78	19.6
Marital Status (n=399)			**Household composition (n=399)** [7]		
Married/In a domestic partnership	263	65.9	N. of adults (average)	2	
Single	63	15.8	Families with children	131	32.8
Dating	19	4.8	**Visited a wine region in the last 3 years (n=399)**		
Separated/divorced	42	10.5	Yes	324	81.2
Widowed	12	3.0	No	75	18.8
Household income before Covid (n=399)			**Household income variation after Covid (n=399)**		
Insufficient	9	2.3	Much worse	30	7.5
Just sufficient	58	14.5	Worse	99	24.8
Sufficient	136	34.1	Unchanged	204	51.1
Good	196	49.1	Improved	42	10.5
Vaccinated (n=389)			Much improved	24	.6
Yes	308	79.2			
No	81	20.8			

Regarding wine tourism travel patterns before Covid-19 (Table 2), most respondents used to visit wine regions located in their same state of residence (87.7 %) either on a day trip (45.4%) or for 2-3 days holidays (40.9 %). A smaller but not negligible share has also travelled to neighbouring states' wine regions (23.3 %). The preferred accommodation is Hotels (29.3),

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[7] Children are intended as 10 years or younger subjects. Diversely, adults are represented by 21 years or older individuals.

followed by smaller groups of respondents usually staying at a private lodging (11.1%) or in bed and breakfast (B&B; 0.9%). Almost half of the sample declares that the pandemic has not affected the travel time and budget. Still, a significant part of the respondents reported a reduction (36.3% reduced their travel budget; 38.8% reduced their time to travel).

Table 2 wine tourism travel patterns before Covid-19

	Freq.	Valid %
The usual length of stay before Covid (n=316)		
Day trip	180	45.5
2-3 days	162	40.9
4-7 days	42	10.6
> 7 days	12	3.0
Preferred accommodation before Covid (n=216)		
Hotel	116	29.3
B&B	36	9.1
Private lodging	44	11.1
Camping-village	17	4.3
Agritourism	1	0.3
Other	2	0.5
Location of the wine regions visited before Covid (n=399)		
In my State BC	347	87.0
In a neighbouring State	93	23.3
In a US wine-making region far from my home state	2	0.5
Overseas	1	0.3
Changes in the budget for travelling after Covid (trav$AC) (n=399)		
reduced	145	36.3
unchanged	197	49.4
increased	57	14.3
Changes in time for travelling after Covid (travtAC) (n=399)		
reduced	155	38.8
unchanged	182	45.6
increased	62	15.5

Table 3 illustrates the descriptive statistics of the latent constructs included in the structural model. Only complete surveys were considered in the analysis, thus reducing the sample to 389 observations. Mean scores for both involvements with wine (WI) and future wine tourism intentions (FUTWTINT) are the highest among all constructs, with values close to 5. While the standard deviation (St. Dev.) for WI is the lowest (1.28), FUTWTINT shows a greater deviation from the mean (1.75). Diversely, acquired an interest in wine while in lockdown (AQWINT) and risk attitude (RA) scored slightly under the average value of the scale, which for a 7-pint Likert corresponds to 4. RA, though, has the highest standard deviation value

(1.83). Finally, the mean value of covid phobia (CPH) is 4.2, but with a standard deviation of 1.72.

Table 3 Descriptive statistics of the latent constructs included in the structural model (SM)

	N	Minimum	Maximum	Mean	Std. Dev.
AQWINT	389	1	7	3.8	1.73
WI	389	1	7	4.9	1.28
CPH	389	1	7	4.2	1.72
RA	389	1	7	3.6	1.83
FUTWTINT	389	1	7	4.6	1.75

Data analysis

After the preliminary descriptive analysis to explore the main characteristics of the sample, we applied partial least square structural equation modelling (PLS-SEM) to assess the impact of the pandemic on wine tourism behavioural intentions. PLS-SEM is a non-parametric, variance-based technique for multivariate data analysis. Although its use has been increasing in the last decade, it is still less common than the widely applied covariance-based structural equation modelling (CB-SEM), especially in hospitality studies (Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2018). Similar to CB-SEM, PLS-SEM estimates complex latent constructs from several items while accounting for the measurement error. Nevertheless, the variance-based PLS-SEM algorithm aims to maximise constructs R^2 rather than minimise the covariance matrix between observed and estimated values, as it happens with maximum-likelihood CB-SEM estimation. Additionally, PLS-SEM is more robust to small sample sizes, does not require multivariate normality and is deemed more appropriate than CB-SEM when the aim of the research is exploratory or prediction-oriented. PLS-SEM model evaluation requires two steps – (1) measurement model (MM) testing and (1) structural model (SM) estimation – that will be discussed separately in the following paragraphs.

Measurement model testing

First, the scales' reliability (Chronbach's alpha) and one-dimensionality are tested using IBM SPSS 27. One-dimensionality is explored for each scale through Principal Axis factor analysis with oblique rotation, the recommended method for behavioural studies where correlation among items is expected (Sparks, 2007). All scales are found to be one-dimensional except the

15-items WI scale, which is found to be bi-dimensional. Precisely, one 6-items dimension representing *wine expertise* and a second 9-items dimension representing *wine enjoyment and relevance* are identified. Only the second dimension is retained for the SEM analysis based on Zaichkowsky's definition of involvement (1985). The choice of keeping only one WI dimension is also made in line with general recommendations on sample size/parameters ratio when applying SEM (Hair et al., 2020). The final observations/parameters ratio is adequate (13:1; Hair et al., 2019), suggesting applying PLS-SEM analysis is appropriate.

Scale reliability is then tested through Chronbach's alpha, and the following values are obtained: .94 for the final WI scale, .95 for CPH, .93 for RA, .95 for AQWINT (Table 4). Therefore, all Chronbach's alpha values are above the recommended threshold (Cronbach's α =0.6; Costello & Osborne, 2005).

Confirmatory factor analysis (CFA) for the measurement model (MM) is further carried out SmartPLS. This step allows assessing the validity of the MM constructs by testing its convergent validity and discriminant validity.

Convergent validity represents the capability of the items to explain the construct: therefore, items capturing the same construct are expected to share a high proportion of variance (Hair et al., 2019).

Convergent validity is confirmed since all standardised factor loadings that are statistically significant and have values above .7, the minimum accepted value. Moreover, all constructs show composite reliability greater than .7 and average variance extracted (AVE) higher than .5 (Hair et al., 2020). The results of the CFA are presented in detail in Table 3. The outer weights of items in the MM are also checked. All outer weights are significant, providing empirical support for items' relevance in the model.

Diversely, discriminant validity represents the extent to which a construct differs from the others in the model. In this case, different approaches are adopted based on the type of SEM performed.

For PLS-SEM, discriminant validity is granted by the Heterotrait-Monotrait Ratio (HTMT), which must be below .85 for conceptually different constructs and below .90 for conceptually similar constructs (Hair et al., 2020). The sample analysed records HTMT values ranging from .013 to .788, thus providing discriminant validity evidence. Additionally, discriminant validity is supported by none of the confidence intervals of HTMT including 1.

Table 4 Results of the confirmatory factor analysis (CFA)

Item description	Standardised factor loadings	Chronbach's alpha	Composite Reliability	Average Variance extracted (%)
Covid Phobia (CPH)				
CPH1 The fear of coming down with coronavirus makes me very anxious.	0.916	0.94	0.96	0.82
CPH2 I am extremely afraid that by travelling me/my family might become infected by the coronavirus.	0.922			
CPH3 News about coronavirus-related deaths causes me great anxiety.	0.903			
CPH4 After the coronavirus pandemic, I feel extremely anxious when I see people coughing.	0.871			
CPH5 The idea of travelling with big groups of people (e.g., by train or plane) makes me anxious	0.919			
CPH6 The fear of coming down with coronavirus seriously impedes my social relationships	0.904			
Risk Attitude (R.A.)				
RA1 Due to the risks connected with the Covid pandemic, I cannot accept going to travel to a wine region with family and friends	0.944	0.93	0.95	0.88
RA2 Due to the risks connected with the Covid pandemic, I cannot accept that local friends and relatives travel to wine regions	0.935			
RA3 I will avoid eating with local friends and relatives after their trip to a wine region	0.929			
Involvement with wine (W.I.)				
WI1 I like to purchase wine to match the occasion	0.814	0.93	0.94	0.66
WI2 Many of my friends share my interest in wine	0.739			
WI3 Deciding which wine to buy is an important decision	0.806			
WI4 I like to gain the health benefits associated with drinking wine	0.721			
WI5 For me, drinking wine is a particularly pleasurable experience	0.751			
WI6 I wish to learn more about wine	0.809			
WI7 I have a strong interest in wine	0.904			
WI8 My interest in wine has been very rewarding	0.896			
WI9 My interest in wine makes me want to visit wine regions	0.848			
Acquired wine Interest in lockdown (AQWINT)				
AQWI1 While in lockdown, I deepened my knowledge about wine	0.904	0.95	0.96	0.83
AQWI2 I feel that during lockdown(s), I became more passionate about wine	0.919			
AQWI3 While in lockdown, I watched and/or read online content (e.g., YouTube videos, blogs) and/or documentaries about wine	0.918			
AQWI4 While in lockdown, I started following profiles of wineries/wine experts on social media	0.903			
AQWI5 While in lockdown, I started looking for more information about the wines I want to purchase	0.923			

Note: n=389.

4. Results

Structural model results

After we validated the measurement model (MM), we estimated the relationships among the latent constructs through the structural model (SM). Figure 1 illustrates the SM with standardised path estimates and their significance, reported in brackets. Observations with missing values for vaccination (vacc) are excluded through listwise deletion, thus reducing the sample to 389 respondents. The model reveals an acceptable fit with SRMR below the .80 threshold (SRMR = .066) and an RMStheta of 0.11 (Hair et al., 2020). The R^2 values are satisfactory, scoring .448 for WI, .489 for AQWINT, .577 for RA, and .305 for CPH.

As for the paths tested, involvement with wine (WI) and acquired interest in wine while in lockdown (AQWINT) are confirmed to be positive antecedents of future wine tourism intentions (FUTWTINT) ($\beta_{WI \to FUTWTINT}$ = .289, t = 4.796, p < .0001 ; $\beta_{AQWINT \to FUTWTINT}$ = .489, t = 7.571, p < .0001). Regarding the effect of the pandemic, Covid phobia (CPH) has a positive but weakly significant impact on FUTWTINT ($\beta_{CPH \to FUTWTINT}$ = .108, t = 1.675, p = .09). On the contrary, risk attitude shows a negative impact significant at 99% C.I. ($\beta_{RA \to FUTWTINT}$ = − .270, t = 4.704, p < .0001). Two dummy variables representing vaccination (vacc) and being a family with children (famchild) have been included in the model as explanatory for CPH and RA, respectively. The effect of both variables is found to be significant: specifically, vaccinated subjects score higher for CPH ($\beta_{vacc \to CPH}$ = .114, t = 2.498, p = .012) and families with children score higher on RA ($\beta_{famchild \to RA}$ = .091, t = 2.555, p = .011). As stated in the previous paragraphs, higher scores for RA represent a higher willingness to avoid risks of contagion.

Economic constraints to travelling have also been included in the model as dummy variables to control for a reduction of the time (red_ttrav) and of the budget (red_€trav) to go on a holiday following the pandemic. While the effect of red_€trav is small and slightly significant ($\beta_{red\_trav€ \to FUTWTINT}$ = .094, t = 1.108, p = .072), red_ttrav has a significant negative impact on FUTWTINT ($\beta_{red\_ttrav \to FUTWTINT}$ = − .149, t = 2.958, p = .003). Lastly, gender and age are considered as controls for on the endogenous constructs in the model, i.e., FUTWTINT, RA and AQWINT. Regarding FUTWTINT, only the age has a significant impact ($\beta_{gender \to FUTWTINT}$ = − .018, t = .460, p = .646; $\beta_{age \to FUTWTINT}$ = − .094, t = 2.171, p = .030). Moreover, age negatively affects AQWINT ($\beta_{age \to AQWTINT}$ = − .199, t = 4.896, p = >.0001). Diversely, gender shows a positive significant impact on both AQWINT and RA ($\beta_{gender \to AQWTINT}$ = − .130, t = 3.571, p = >.0001; $\beta_{gender \to RA}$ = .102, t = 2.972, p = .003). The effect size is evaluated through the f^2 statistic, which represents the contribution of each exogenous construct to

explaining the variance of an endogenous one, i.e., to its R^2. Specifically, values of .02, .15 and .35 indicate small, medium, and large effects (Hair et al., 2020). reports the f^2 statistics of the variables included in the model. As it can be seen in Table 5, the greatest effects on FUTWINT come from AQWINT and WI, showing a medium ($f^2_{AQWINT - FUTWTINT}$ =.17) and a large ($f^2_{WI - FUTWTINT}$ =.80) f^2 statistic, respectively. Diversely, the effect size of RA is small to medium (0.05) while that of time constraints is small ($f^2_{red\_ttrav - FUTWTINT}$ = .02). Large effect sizes are present for fear and anxiety related to Covid infection (CPH) on RA ($f^2_{CPH - RA}$ = 1.13), and for WI on AQWINT ($f^2_{WI - AQWINT}$ = .67)

Mediation effects are also explored by applying the bootstrapping procedure with 10,000 resamplings and a 95% confidence interval (C.I.). A complimentary mediation emerges for the WI →AQWINT→FUWTINT path (β = .296, t = 6.936, p < .0001) since the direct effect and the indirect effect of WI on FUTWTINT are both significant and have the same direction. Diversely, the effect of CPH on FUTWTINT is fully mediated by RA (β $_{CPH -> RA -> FUTWTINT}$ = − .194, t = 4.525, p < .0001). Nevertheless, the relationship between WI and FUTWTINT is mediated neither by CPH nor by the combination of CPH and RA. Lastly, a competitive serial mediation of WI → AQWINT → CPH → RA → FUTWTINT is present (β = − .057, t = 3.982, p < .0001), although limited in size.

Predictive relevance Q^2 is calculated through blindfolding to evaluate the model's out-of-sample predictive power, i.e., its capability to make predictions on data other than that used for sample estimations. Specifically, Q^2 values greater than 0 provide empirical evidence of the SM for the latent construct considered (Hair et al., 2020). Q^2 estimations revealed good scores for all endogenous constructs (Q^2 AQWINT = .404; Q^2 CPH = .246; Q^2 FUTWTINT = .419; Q^2 RA = .500). Table 6 summarizes the results of the hypotheses tested.

Figure 1 Results of the structural model for PLS-SEM
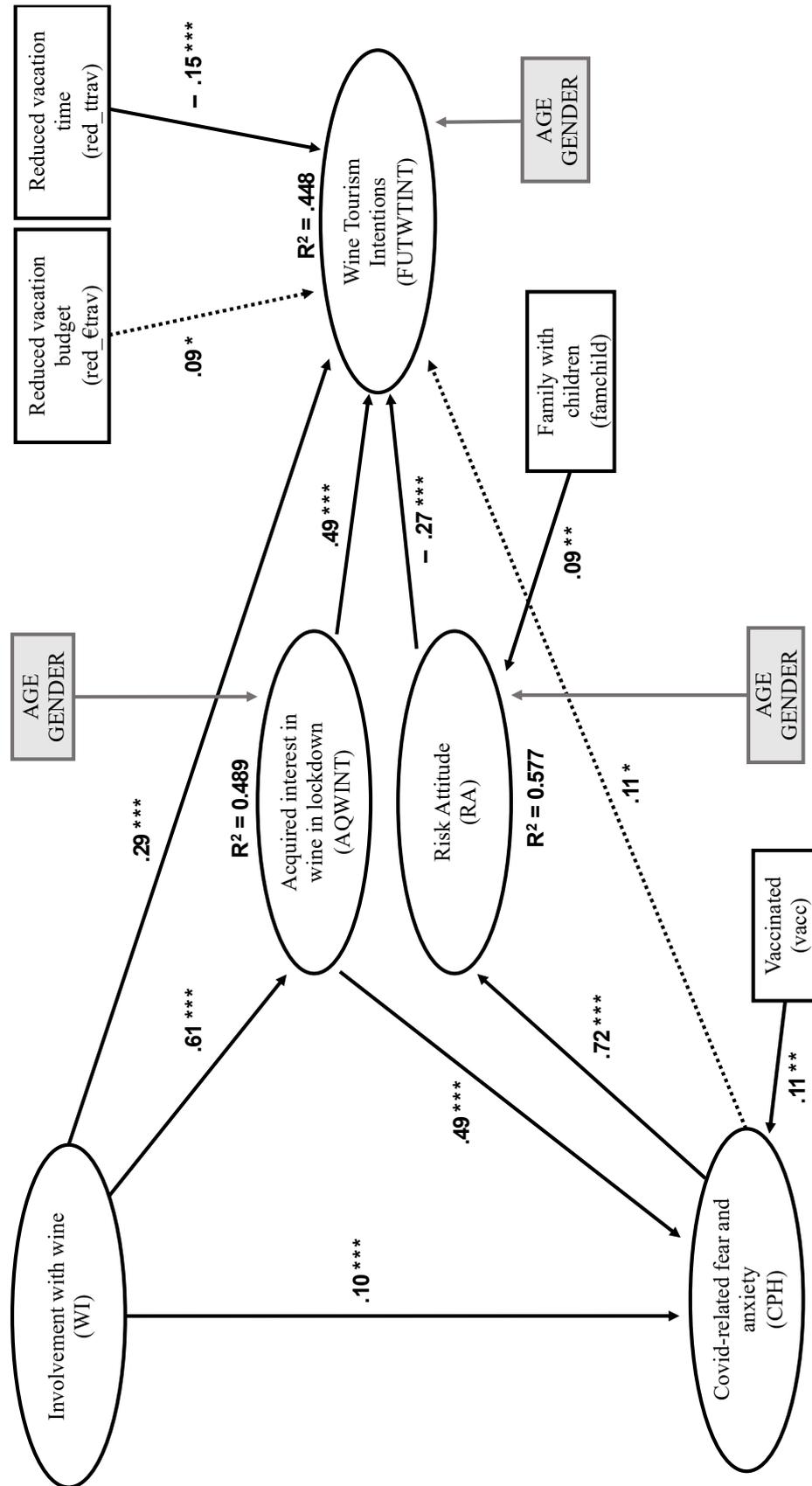
*Note: n = 389; ***p < .01; **p < .05; *. Significant paths at 95% C.I. are represented with a continuous line and the related structural weights are reported in bold. Constructs are represented by ovals, while observed variables are marked as rectangles.*

Table 5 f^2 values of the effects

	AQWINT	CPH	FUTWTINT	RA
AQWINT		.19	.17	
Age	.07		.01	.00
CPH			.01	1.13
Gender	.03		.00	.02
RA			.05	
WINV	.67	.01	.80	
famchild				.02
red_ttrav			.02	
red_€trav			.01	
vacc		.02		

Note: n=389. Values of .02, .15 and .35 indicate small, medium, and large effects (Hair et al., 2020).

Table 6 Summary of the hypotheses tested and the related outcomes

Hypothesis tested	Outcome
H1. RA negatively affects FUTWTINT	Supported
H2. CPH positively affects FUTWTINT	Not/Partially supported
H3. RA competitively mediates the relationship between CPH -> FUTWTINT	Partially supported
H4. Being vaccinated (vacc) positively impacts CPH	Supported
H5. Being a family with children (famchild) positively impacts RA	Supported
H6. A reduction of budget available to travel (red_$trav) negatively impacts future wine tourist intentions (FUTWTINT)	Not supported
H7. A reduction of the time available to travel (red_ttrav) negatively impacts future wine tourist intentions (FUTWTINT)	Supported
H8. WI positively affects FUTWTINT	Supported
H9. WI positively affects AQWINT	Supported
H10. AQWINT positively affects FUTWTINT	Supported
H11. AQWINT complementary mediates the relationship between WI -> FUTWTINT	Supported
H12. CPH competitively mediates the relationship between WI -> FUTWTINT	Not supported
H13. CPH and RA competitively mediate the relationship between WI -> FUTWTINT	Not supported
H14. CPH and RA competitively mediate the relationship among and WI -> AQWINT, and FUTWTINT	Supported

5. Discussion and conclusions

The present study analyses the impact of the Covid-19 pandemic on wine tourism behavioural intentions relying on a representative panel of US wine tourists. The results provide essential information to wine tourism stakeholders in the short run and in the long run: indeed, the Covid-19 pandemic is currently undefeated, and the constant growth of international travels favours the spread of infectious diseases through the rapid movement of large groups of people (Rossello, Santana-Gallego, & Awan, 2017).

Particularly, this research contemplates both the negative and positive effects of the pandemic: while the latter derives from having more time available during lockdowns and in times of restriction, the negative effects considered are fear and anxiety connected to Covid-19 infection – i.e., covid phobia (CPH) –, attitude towards risk (RA), and economic constraints to travelling as the reduction of the budget (red_€trav) and the time (red_ttrav) available to go on holiday.

In line with recent research (2020), the results of our model highlight that Covid-related fear and anxiety (CPH) does not affect the intention to go on a wine holiday. Indeed, the path shows a positive but poorly significant effect. Diversely, risk attitude (RA) has a significant negative impact on wine tourism intentions, and it fully mediates the effect of CPH.

As expected, families with children tend to score higher on RA, indicating that they are less prone to take travel-related risks. Since people tend to adjust their risk-taking behaviour based on the expected advantages and losses (Sarin & Weber, 1993), perceived losses may increase considerably, promoting risk-aversion when children are involved. Moreover, RA tends to be higher for males suggesting they are less prone to risks than women.

In line with theories exploring human behaviour during pandemics (Taylor, 2019), vaccinated respondents in the sample score higher in CPH. This can be explained by the fact that people who are more afraid to be infected and therefore experience greater anxiety are also those who tend to act to protect themselves from Covid-19 through the vaccine. Together, these effects point out that, as past studies highlighted (Park et al., 2021; Song et al., 2019), rural destinations like wine regions are potentially perceived as safe places to travel in times of shock, which explains the non-significant effect of CPH, but this is only true if risk aversion does not come into play.

On a different note, the Covid-19 pandemic also implies some indirect benefits. Involvement with wine (WI) is confirmed to be a significant antecedent of wine tourism and in the model proposed, its positive effect is partially mediated by having dedicated time to wine activities during home confinement periods (AQWINT). At the path level, the impact of AQWINT on wine tourism intentions is also positive and greater than that of WI. Still, the contribution of

WI in explaining FUTWTINT variance is larger. AQWINT, moreover, is strongly impacted by a pre-existing involvement with the product (WI), as evidenced by the large WI -> AQWINT effect size and path score. This confirms results from past studies (e.g., Brown, Havitz, & Getz, 2006; Sparks, 2007) that highlighted the relevance of involvement with wine in determining wine tourism intentions.

Additionally, our model's fluctuations in wine tourism intentions are explained to a greater extent by the positive factors – WI and AQWINT – rather than by RA, CPH and time constraints. A share of this positive effect on wine tourism intentions coming from the combination between WI and AQWINT seems to be reduced in the presence of CPH and RA, although to a minor extent. Therefore, the combined positive effect of AQWINT and WI is only minimally neutralised by the drawbacks of the pandemic. Similarly, the model highlights that reducing the time available for travelling following the pandemic diminishes wine tourism intentions. Still, its impact is minor, while budget constraints do not represent a limiting factor. Therefore, based on our results, the balance of the pandemic effect is positive as Covid-19 indirectly encouraged the intention to visit a wine region by giving people more free time to explore and strengthen their interest in wine.

The structural model also reveals that situational involvement effects (AQWINT) are stronger in males and younger generations. The age effect on AQWINT is potentially connected to how the scale is conceived since it included items regarding wine-related social media activities and online entertainment.

Generally, this research points out how dedicating time to wine on social media and consulting online wine-related content can affect wine tourism plans in a relatively short run, i.e., in the next 12 months. In this regard, it pinpoints the importance of "being at the right time, in the right place" to capture tourists' attention through properly planned marketing and communication actions able to affect their intentions in the pre-visit stages of the travel experience: the dreaming and the planning phase (Fernández-Cavia, Vinyals-Mirabent, Fernández-Planells, Weber, & Pedraza-Jiménez, 2020; Gretzel, 2021). Moreover, although this research focuses on the specific context of the limitations created by the pandemic (e.g., lockdowns), this finding can reasonably apply also to other moments in which wine tourists have more free time to explore their interest in wine like weekends or holidays. This leaves room for future research to examine the effect of online entertainment and marketing campaigns during the low season on wine tourism intentions and behaviour, considering the role of new tools such as virtual wine tourism experiences.

Additional research should also explore how the positive and negative effects of the pandemic on wine tourists' intentions impacted their behaviour, which has not been tackled by this study and would help quantify their actual impact on wine tourism operators.

Furthermore, the effect of wine travellers' attitude towards risk on intention to partake in wine tourism raises the attention on the role played by risk-related communication, particularly pre-travel (Page, 2009). Indeed, past literature has pointed out that perceived risk can affect travel decisions (Sönmez, Apostolopoulos, & Tarlow, 2016; Sönmez & Graefe, 1998) and that destinations' perceived safety is impacted by how information is delivered (Kozak, Crotts, & Law, 2007). Precisely, higher transparency in communicating risks helps increase travellers' confidence in the destination attracting them (Kozak et al., 2007), while sensationalism damages perceived destination safety (Sönmez & Graefe, 1998). In this regard, media coverage plays a crucial role in handling the effect of risk perception on the intention to travel (Neuburger & Egger, 2020). Furthermore, repeated exposure to Covid-related content, both written and visual, can also raise fear and anxiety for the virus (Arpaci et al., 2020), which according to our results, promotes risk aversion. Since our model provides evidence that risk attitude negatively affects wine tourism intentions, the primary antecedent of tourists' behaviour (Ajzen, 1991), authorities and destination management operators (DMOs) should carefully choose the appropriate communication style. At the same time, they should provide travellers with sufficient reliable information to avoid damaging the destination(s) involved. At a firm level, wine tourism actors should also provide timely information on the potential risks while highlighting the provisions taken to minimise them.

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Chapter 4 – Virtual wine Experiences: Is Covid Extending the Boundaries of wine Tourism?[8]

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Abstract

wine tourism has long been a strategic tool for Italian wineries. Nevertheless, the Covid-19 outbreak jeopardised its dynamics on multiple levels, creating physical (e.g., social distancing, travel bans) and psychological barriers. Online wine experiences (OWE) constitute one of the resilience strategies adopted by wine tourism actors. So far, OWE are a relatively new phenomenon in scientific literature. The current study tackles this gap by analysing the drivers of interest for OWE among Italian wine tourists (n=408) through Structural Equation Modelling (SEM). Remarkably, the model considers long-term (i.e., involvement with wine) and short-term (Covid-19 fear and anxiety) factors, digitalisation, and willingness to support local wineries by partaking in wine tourism. Results highlight that interest in online wine experiences is not pushed by the need to temporarily replace wine holidays due to the fear of being infected. Instead, this interest is driven by a combination of context-dependent factors and involvement with wine. In addition, practical and managerial implications are discussed.

Keywords: virtual wine tourism; online experience; Covid-19; consumer behaviour; wine tourism; structural equation modelling

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[8] This chapter is an edited version of: Gastaldello, G., Giampietri, E., Zaghini, E., Rossetto, L. (2021). *Virtual wine experiences: is Covid extending the boundaries of wine tourism?* Currently under review at the journal wine Economics & Policy

1. Introduction

The Covid-19 pandemic has profoundly impacted the dynamics of the tourism sector, including rural and wine tourism. Restrictions applied to slow down the diffusion of the virus, e.g., mobility bans and social distancing, have revealed the strong susceptibility of the tourism industry (Gössling & Lund-Durlacher, 2021). According to the United Nations World Tourism Organization (UNWTO)[9], in 2020, international arrivals in Europe recorded the worst negative peak since the fifties (-70% compared to 2019) due to prolonged bans on international tourism, hotel closure, and mobility restrictions.

The Italian tourism sector is no exception, as Italy is among the worst-hit countries by the Covid-19 pandemic. Indeed, several governments-imposed country-specific travel bans and limitations for tourists travelling from Italy. Before Covid-19, Tourism alone generated a 93 billion Euros turnover and a direct contribution to the Italian Gross Domestic Product (GDP) of 6%. Considering the sector's indirect contribution to the GDP created, for example, by restaurants, tourism services and tour operators, the total tourism contribution of tourism to GDP raises to 13.4%[10]. As a result of the pandemic, though, both domestic and international tourism flows have considerably shrunk, recording a –33.8% and –70.3% drop, respectively (Banca d'Italia, 2021).

The negative consequences of Covid-19 affected the national wine tourism industry as well, although some key characteristics helped its resilience to the pandemic. For instance, past literature analysing the effect of shocks on tourism flows (e.g., terrorist attacks; Song & Lin, 2010) report that compared to urban destinations, rural areas are generally perceived as safer places to visit in case of threats. Additionally, proximity has long been identified as a success factor in wine tourism (Getz & Brown, 2006) since a remarkable share of wine region visitors are reported to be domestic tourists. Except for the lockdown phase, national wine tourists were allowed to circulate within the Country and have not been affected by mobility bans. In the last decades, though, wine tourism has considerably evolved from being a niche market to attracting fleets of tourists from all over the world: see the Prosecco Region, where almost 50% of tourists in 2019 were travelling from other Countries (Boatto, Pomarici, & Barisan, 2020). However, as mentioned above, travel restrictions have jeopardised international tourism flows to contain the spread of the Covid-19 virus. Additionally, the pandemic prompted the diffusion of fear and anxiety among the population (Ahorsu et al., 2020; Luo & Lam, 2020; Mamun & Griffiths, 2020), which have notably contributed to changing (wine) tourists' travel patterns.

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[9] UNWTO (2021). Retrieved from: https://www.unwto.org/covid-19-and-tourism-2020
[10] ISTAT (2020). Conto satellite sul turismo (CTS). Retrieved from: https://www.istat.it/it/archivio/244487

The diminishing of wine tourism flows is particularly alarming due to the critical role of the industry as a marketing channel for wineries (Boatto, Galletto, Barisan, & Bianchin, 2013; Taylor, Barber, & Deale, 2010; Winfree, McIntosh, & Nadreau, 2018) and for the development of rural areas (Mauracher, Procidano, & Sacchi, 2016; Montella, Cavicchi, Santini, & Rosen, 2017), creating diversified sources of income, preventing land abandonment and promoting landscape's rehabilitation. In 2019, the industry recorded 15 million wine tourists (+9% over the previous year) for a total turnover of 2.65 billion Euros (Associazione Nazionale Città del Vino, 2020; R. Garibaldi, 2020).

A recent study from Garibaldi et al. (Roberta Garibaldi, 2020), though, highlighted that 44% of Italian wine tourism actors (e.g., wineries, etc.) declared an overall financial loss between 10% and 50% following the Covid-19 outbreak, reaching -70% in case of wine tourism activities for almost 35% of the sample, raising concerns about the timing to restore to the pre-covid performance of the sector.

Consequently, many wineries and oeno-gastronomic tourism providers found alternative ways to bridge the gap between producers and the final consumers (i.e., wine tourists) created by mobility restrictions and social distancing measures. In this context, online oeno-gastronomic experiences emerged as a strategic tool for remote communication and marketing. Specifically, wine tourism practitioners created online oeno-gastronomic events, virtual winery tours, and online wine tastings via video-conferencing platforms such as Zoom. Currently, this new trend is expanding from single wineries to consortia, which are offering virtual wine tastings as part of territorial marketing campaigns.

Therefore, in line with recent literature (Sigala, 2020), the shock caused by the Covid-19 triggered wine tourism innovation. Specifically, OWE became a way to overcome the deep uncertainty generated by the Covid outbreak, which after two years is still undefeated, and to boost the resilience of wine tourism actors. Nevertheless, drivers of virtual wine tourism experiences' attractiveness are currently unexplored, thus limiting their potential.

As a novel contribution, this study allows filling this gap by exploring the interest in online wine tourism (INTOWE) experiences to understand whether this phenomenon has the potential to survive the pandemic. Notably, it examines long-term and short-term potential predictors of this interest while focusing on Italy, where wine tourism represents a stable and consolidated reality.

The findings of this research are helpful to understand whether online oeno-gastronomic experiences' attractiveness is short-term and context-dependent or if it leaves room for long-term planning. This is paramount because the Covid pandemic is enduring, and the related

operational obstacles limit travellers and wine tourism operators. Information provided is strategic to wineries, sector stakeholders, and regulators to offer OWE development support. Finally, this study is also of interest to the academic world. Indeed, it represents the first attempt to investigate an emerging topic in the literature, providing valuable insights for future research. The paper is structured as follows: the first paragraph proposes a review of the literature on drivers of wine tourism intentions, developing the hypotheses; the second paragraph describes materials and methods; followed by SEM results (paragraph 3); and, finally, discussion and conclusions follow.

2. Background

Over the last decades, wine tourism has become an important segment of the wine industry (Ali-Knight & Charters, 2001).

Wine tourism experiences are indeed strategic marketing tools for wineries to establish a direct relationship with consumers, also at the international level, gaining long term benefits in terms of wine sales, customer education and loyalty creation (Hall, Sharples, Cambourne, & Macionis, 2009; Tafel & Szolnoki, 2020; Wen & Leung, 2021). Also, wine can be an important way of presenting the identity and the local culture of many destinations (Roberta Garibaldi, Stone, Wolf, & Pozzi, 2017), and wine tourism can contribute to a wine region's economic development (Mauracher et al., 2016; Montella et al., 2017; Vo Thanh & Kirova, 2018). In Italy, the bond between tourism and oeno-gastronomy is solid: indeed, the nation counts 526 wines and 294 food products registered and protected under the Geographical Indications quality scheme, i.e., as "products whose quality, reputation or other such characteristics relate to their geographical origin" (European Commission). Furthermore, the Italian oeno-gastronomic culture is a crucial pull-motivation for international and domestic visitors: 63% of domestic tourists consider the offer of food and wine tourism activities a priority when choosing a destination (Roberta Garibaldi, 2018).

As previously explained, the Covid-19 outbreak caused significant impediments to both wineries (e.g., limiting their operating space) and tourists, who were impacted physically (e.g., the pandemic prevented wine tourists from travelling) and psychologically. Therefore, virtual (wine) experiences started to spread in this extraordinary context, representing an essential tool for wine tourism stakeholders.

Intended as virtual tours of the winery, online wine tastings, and food and wine events, online wine experiences (OWE) fall under the definition of wine tourism as they imply consumers'

engagement with wine and winemaking (O'neill & Palmer, 2004). Typically, wine tourism activities are enjoyed by tourists who are willing to participate in an immersive activity, with the broader aim to experience the whole wine region, including landscape traditions, culture and heritage (Getz & Brown, 2006; Sigala & Robinson, 2019). The literature identifies wine tourists as a heterogeneous group of people pursuing full enjoyment from different aspects of a wine tourism experience (S Charters, 2006; Hall et al., 2009), and is characterised by a different level of involvement with wine (Johan Bruwer & Alant, 2009; Giampietri, Donà Dalle Rose, & Morlin, 2018).

The following paragraphs provide an overview of the profile of wine tourists, which are the focus of this analysis, and on the main antecedents of wine tourism intention that can impact interest in online wine tourism experiences. Given the extraordinary circumstance of the pandemic, the role of Covid-19 fear and anxiety in shaping (wine) travel intentions is also discussed, exploring their function as a context-related driver of interest for OWE.

wine tourism and the profile of wine tourists

O'Neill and Palmer (2004) define wine tourists as any visitor of a region, either a day-tripper or staying overnight, that engages with activities aimed at enjoying local wines and the winescape, that is, "the place where wine tourism activities take place" (Sigala & Robinson, 2019) embodying the wine product, the wineries and the winemaking tradition, as well as the servicescape and the scenery (Johnson & Bruwer, 2007). However, the concept of wine tourism has evolved, and wine tourists with it. Recent literature argued that "wine tourism consists of an activity directly related to wine which provides a dynamic and versatile experience that integrates wine culture and heritage to create emotions, sensations, attachment and sensory impressions through the visit, allowing the wine tourist to become an advocate of that particular cellar, brand or wine region" (Santos, Ramos, Almeida, & Santos-Pavón, 2019, p. 683). In its turn, the definition of wine tourists has expanded, falling into the broader classification of cultural tourists, educated visitors who exhibit a strong desire to learn (Croce & Perri, 2010). Moreover, they are willing to connect with the product's place of origin and to visit the wine region where a specific wine is produced (Alant & Bruwer, 2004).

Generally, wine tourism represents a social leisure activity (Alant & Bruwer, 2004; Kelley et al., 2019; Quadri-Felitti & Fiore, 2012) as travellers who engage in this activity are often accompanied by other people (e.g., spouse, husband, partner, family members, close friends) (Johan Bruwer & Alant, 2009; Johan Bruwer & Li, 2017). Nevertheless, the plethora of studies segmenting wine tourism demand identified several other characterising traits of wine

travellers such as gender, age, education, wine consumption habits, financial status, lifestyle, motivations and product involvement (Steve Charters & Ali-Knight, 2000; Kelley et al., 2019; Nella & Christou, 2014; Sigala, 2014). Indeed, they tend to be involved consumers of wine (Alebaki, Menexes, & Koutsouris, 2015; Brown, Havitz, & Getz, 2007; Koksal, 2021; Nella & Christou, 2014) and to possess a degree of knowledge in the topic (Ali-Knight & Charters, 2001; Johan Bruwer & Alant, 2009; Sigala & Robinson, 2019). In a recent report on wine tourism from Garibaldi (2018), the author provides an updated profile of Italian wine tourists: they mainly belong to the so-called generation X (born within 1965-1980) or millennials generation (1981-1998), place great importance on food and wine tourism offer when choosing a destination, spend more on oeno-gastronomic products, share contents on social media more often, and have strong loyalty intentions (Roberta Garibaldi, 2018).

In times of pandemic, where travel activities suffer substantial restrictions and increase the risk of infection, it is reasonable to believe that wine tourists become attracted to online wine tourism experiences as a new way to pursue their interest in wine-related travels. In this respect, they represent an ideal target for online wine tourism providers. Furthermore, in line with the description reported above, they are most likely to purchase the products tasted and visit the wine region presented in a future journey.

Involvement with wine

The literature extensively reports that one of the main antecedents of wine and wine tourism consumption is product involvement, or involvement with wine (J. Bruwer & Buller, 2013; Nella & Christou, 2014; Roe & Bruwer, 2017; Sparks, 2007). Although the definition of involvement is somewhat fuzzy, it can be generally described as a "state of interest, motivation or arousal" (Rothschild, 1984, p. 216). Behavioural studies distinguish among several types of involvement, which can be triggered by several factors and have different duration. For example, Zatori et al. (2018) introduced the concept of experience-involvement, referring to the personal, real-time involvement arousing on-site while consuming an experience, and is the consequence of consumers' attention. The authors further argue that experiences delivering high experience-involvement unleash positive emotions, thus favouring memorability and loyalty intentions. Diversely, extensive research on leisure activities as wine tourism considers ego-involvement. Ego-involvement corresponds to what Zaichkowsky (1985) identified as personal involvement and defined as an "unobservable state of motivation, arousal or interest toward a recreational activity or associated product, evoked by a particular stimulus or situation, and which has drive properties" (Rothschild, 1984, p. 216). Unlike experience

involvement, ego-involvement drives consumers' attention (Celsi & Olson, 1988). Brown et al. (2007) conceptualized ego-involvement in wine tourism through the wine involvement scale (WIS), a 3-dimensional tool embodying symbolic centrality, enjoyment, and expertise, built over the solid theoretical background of the Consumer Involvement Profile (CIP) scale (Laurent & Kapferer, 1985). Their findings reveal that ego involvement with wine (WI) strongly characterizes wine consumption, wine purchase and wine tourism patterns. Sparks (2007) further argued that ego-involvement could play a key role in motivating to partake in wine tourism.

Consumer research found that involvement with specific activities or products increases the involvement with related services (Day, Stafford, & Camacho, 1995; Wu & Liang, 2020). It also found a positive relationship between product involvement and destination image (Pratt & Sparks, 2014; Wu & Liang, 2020). Additionally, WI affects consumers' motivations and perceived importance of sensory wine characteristics like wine bouquets and appearance (Rahman & Reynolds, 2015). Since wine tourism activities revolve around wine tastings, WI is paramount to the sector.

Given the above and following the literature, ego involvement can, directly and indirectly, affect consumers' wine tourism intentions (Lee & Shen, 2013; Pratt & Sparks, 2014), influencing their perception of the destination and positively impacting future travel intentions (Wu & Liang, 2020). In this respect, ego involvement with wine can positively affect interest in online wine experiences considering their classification as wine tourism activities.

Focusing on both the interest in online wine tourism experiences and on future wine tourism intention, we test the following hypotheses:

H1: Involvement with wine (WI) positively affects interest in online wine tourism.

H2: Involvement with wine (WI) positively affects future wine tourism intentions.

Willingness to support local wineries

The Covid-pandemic and the following socio-economic crisis have potentially induced people to become more sensitive to society's problems (Cappelen, Falch, Sørensen, & Tungodden, 2021; Guterres, 2020). Therefore, wine tourists may be more inclined to both online and offline wine tourism activities pushed by the desire to support local wine producers. Several studies (Cranfield, Henson, & Blandon, 2012; Giampietri, Koemle, Yu, & Finco, 2016; Testa, Galati, Schifani, Di Trapani, & Migliore, 2019) highlight that consumers often perceive locally produced food or buying directly from the farmer (e.g., direct selling at the farm), as a means

to support local farmers and communities since they contribute to the value creation and economic sustainability of the territories (Delgadillo, Reyes, & Baumgartner, 2021; Giampietri et al., 2016). In line with this, various authors (Giampietri, Verneau, Del Giudice, Carfora, & Finco, 2018; Sage, 2003) argue that the direct interaction between producers and consumers can create or reinforce sentiments of trust and mutual regard, leading to a sense of commitment and solidarity. In this sense, wine tourists can concretely support local businesses indirectly, by spending their holidays in a wine region, or directly, by purchasing local specialities.

In the Covid-19 pandemic scenario, online wine tourism experiences can be effective tools for wine tourists to manifest their support to local wineries and for wineries to promote loyalty and solidarity when in-person meetings are not possible and/or difficult to achieve.

Accordingly, we test the following hypotheses:

H3: Willingness to support local wineries (SUPLOCW) positively affects the interest in online wine tourism.

H4: Willingness to support local wineries (SUPLOCW) positively affects future wine tourism intentions.

Covid related fear and anxiety

Other than causing severe impediments to international mobility, the pandemic generated significant psychological discomforts to the worldwide population: such discomforts are due, among other things, to the ease of transmission of the virus and the severity of the Sars-Cov-2 illness (Arpaci, Karataş, & Baloğlu, 2020). Differently from psychological consequences arising from other types of shocks, though, those generated by an event as the Covid-19 pandemic tend to be extensive and long-lasting (Lin et al., 2020). Specifically, the virus outbreak caused a general state of fear and anxiety (Gammon & Ramshaw, 2020): the emotion of fear reflects in the individual awareness of potential or actual danger (De Hoog, Stroebe, & De Wit, 2008; Luo & Lam, 2020), while anxiety represents a response to fear (Clark & Beck, 2011). Arpaci et al. (2020) are among the first to develop a self-diagnostic tool to assess the level of fear and anxiety – i.e. oh phobia – towards the Covid-19 virus: the Covid Phobia Scale (C19P-S). Other studies developed different tools to capture the individual fear of Covid-19 (see for instance Ahorsu et al., 2020) and measured anxiety as a separate construct (Luo & Lam, 2020), but the C19P-S tool embodies both anxiety and fear. Particularly, the original C19P-S comprises four dimensions: economic (i.e., related to food security), psychological, psychosomatic, and social (i.e., referring to social relationships).

Fear and anxiety connected to Covid-19 infection are particularly important feelings to be considered when analysing tourists' behaviour after the pandemic. Indeed, travelling implies a risk of contagion due to uncontrolled social contacts with other people, which is the leading way through which the virus spreads (Schijven et al., 2020), thus representing a dangerous activity. In this sense, the fear of the contagion of Covid-19 might push wine tourists to participate in online wine tourism experiences, being perceived as a safer option. Therefore, we formulate the following hypotheses:

H5: Covid-related fear and anxiety (CPH) positively affect the interest in online wine tourism.

H6: Covid-related fear and anxiety (CPH) positively mediate the relationship between future wine tourism intentions and the interest in online wine tourism.

Interest in online wine tourism experience

By definition, wine tourists possess an underlying interest in wine and everything that revolves around it, with interest representing the degree of enjoyment a subject gets from engaging in specific activities (Hong, Hwang, Liu, Ho, & Chen, 2014). As aforementioned, online wine tourism experiences (OWE, e.g., virtual tours of the winery, wine tastings, and food and wine events) imply consumers' engagement with wine and winemaking, just like in-presence wine tourism activities. Therefore, wine tourists are likely to be interested in OWE as well.

In its turn, the Covid-19 outbreak may have pushed interest in OWE. Indeed, the pandemic has given people additional free time to engage in leisure activities, many of which were reached through technology (Gammon & Ramshaw, 2020) due to home confinement and social distancing measures. Coherently, the use of social media and online shopping recorded a significant increase significantly (UNCTAD, 2020). In this respect, wine tourists are likely to take advantage of the newly acquired free time to explore their interest in wine through online activities. Moreover, wine tourists who are already familiar with digital wine tools, namely those who are used to purchasing wine online and have an app on wine and/or on wine tourism on their smartphone, are more likely to approach virtual wine experiences. Notably, young consumers (i.e., Generation Y and Generation Z) are shown to be more familiar with digitalisation (Mueller, Fountain, & Lamb, 2011; Wen & Leung, 2021).

Research highlights that the potential of OWE goes beyond the context-related needs of a pandemic. Virtual Reality (VR) emerged as a helpful marketing tool for tourism destinations since it allows consumers to experience a destination without physically visiting it, creating embodiment in the consumer, and acting as a trigger for wine tourism development (Martins et

al., 2017; Wen & Leung, 2021). Petit et al. (2019, p. 42) argue that digital interacting technologies are helpful tools for creating the "webmosphere", that is, " the conscious designing of web environments to create positive effects". A recent study conducted by Wen and Leung (2021) found that watching wine tours through the use of VR headsets creates higher intentions to purchase and a willingness to pay a higher price for wine. Generally, the literature highlights that highly involved wine consumers, who consider themselves wine experts, are more prone to use technology for purchasing wine (Higgins, Mcgarry Wolf, Bitter, & Amspacher, 2015). Moreover, the underlying personal involvement with the product (WI) affects the subject's interest in dedicating time to wine activities.

Given the above, we postulate as follows:

H7: Having an app on wine/wine tourism on the smartphone (WAPP) positively affects the interest in online wine experiences

H8: Purchasing wine online (BUYWONLINE) positively affects the interest in online wine experiences

H9: Future intention to go on a wine holiday (FUTWTINT) positively affects interest in online wine experiences

3. Methodology

Data collection

Data are collected through an online survey administered on a sample of Italian wine tourists. The target population of interest is reached through social networks and word of mouth. Specifically, over 40 Facebook groups dealing with wine, food, and travel, and actors of the Italian wine sector are involved. In line with Villacé-Molinero, Fernández-Muñoz et al. (2021), snowball sampling is deemed the appropriate technique in light of the urge to collect data on a rapidly evolving phenomenon under the unprecedented circumstances of the pandemic.

Data collection took place between June and July 2020, i.e., after the first national lockdown in Italy, and the final sample comprises 408 valid questionnaires. The present study identifies wine tourists as people who visited a wine-producing region and/or participated in a wine festival in the previous three years (Brown et al., 2007; Roberta Garibaldi, 2018).

The structured survey includes the following questions and constructs: socio-demographic information, wine digitalization, willingness to support local wineries (SUPLOCW), ego-involvement with wine (WI), covid phobia (CPH), future wine tourism intentions (FUTWTINT), and interest in online wine tourism experiences (INTOWE).

Specifically, age, gender, income, education, and marital status are included in the socio-demographic section. We adapted the descriptive sentences from the National Institute of Statistics (Istat) survey on living conditions for income. Two yes-or-no statements represent wine digitalization: "*Do you have an app dedicated to wine and/or wine tourism on your smartphone? (e.g., Tannico, Vivino, Enosocial)*", and "*Do you buy wine online?*".

Ego-involvement with wine (WI) is captured through an adapted version WIS scale by Brown et al. (Brown et al., 2007), referring to ego-involvement. In particular, the Exploratory Factor Analysis (EFA) and the Reliability analysis (Cronbach's alpha) are run on each scale separately, with principal components as the extraction method and oblique rotation. EFA results on the WI scale led to drop 6 items representing symbolic centrality. As pointed out by past research (Gursoy & Gavcar, 2003), the symbolic centrality dimension may show inconsistencies when different contexts are considered. Reliability statistics restricts the final scale to 7 items representing enjoyment and expertise, measured on a 7-point Likert scale where 1 = totally disagree and 7= totally agree (Cronbach's alpha = .96). The items included are described in detail in Table 2.

Fear and anxiety towards Covid (hereafter referred to as CPH) are captured through an adapted version of C19P-S from Arpaci et al. (2020). Notably, this paper considers the psychological

(PSYC) and social (SOC) dimensions C19P-S (Cronbach's alpha = .91), the most relevant for the tourism context. Since the present study focuses on the impact of Covid-related fear and anxiety on interest in online wine experiences, the social dimension is particularly relevant. Indeed, travelling is a social activity implying several, often uncontrolled interactions with other subjects, the primary source of infection.

Conversely, we excluded the economic and psychosomatic dimensions since the former referred to food-security issues that did not apply at the time of data collection. Instead, the latter referred to symptoms connected to phobia as a medical condition that was not the focus of this study.

We then included three items for both PSYC and SOC based on factor loadings and relevance for the field. One item was dropped based on Cronbach's alpha, reducing the final CPH scale to 5 items measured on a 7-points Likert scale (1 = totally disagree; 7 = totally agree). Similar to WI, Table 2 reports the items of the CPH scale.

Future wine tourism intentions (FUTWTINT) were captured by a single item representing the willingness to take a wine trip in a future holiday: "*I would really like to visit a wine region in a future holiday*". FUTWTINT was also captured on a 7-points agree-disagree Likert type scale.

Interest for online wine tourism experiences (INTOWE) was measured through two 7-points Likert type items (1 = totally disagree to 7= totally agree), capturing the interest for the most common types of online wine experiences: "*I am interested in participating in online wine tastings*" (INTOWE1), and "*I am interested in participating in online food and wine events*" (INTOWE2).

Finally, one item measured on a 7-points Likert scale (1 = totally disagree, 7= totally agree) captures the willingness to support local wineries by purchasing locally produced wine (SUPLOCW). The item was as follows: "*I feel I should support Italian wineries by buying locally produced wine*".

Descriptive statistics of the sample

As described in Table, the sample is composed of an equal share of men and women. The respondents are mainly aged between 30-50 (55%), and all age groups except over 60s (7%) are adequately represented in the sample. The lower share of older wine tourists is presumably due to data collection primarily relying on social media. In line with past research (Alebaki & Iakovidou, 2011; Croce & Perri, 2017), most respondents are highly educated, possess a university degree (49%), or have a post-graduate qualification (17.4%). Moreover, the average

family income is either sufficient (48%) or good (43%). Namely, the present research describes as *sufficient* an economic situation in which the monthly income was barely enough to cover expenses and hardly allowed to accumulate savings. In contrast, a *good* financial situation corresponds to a monthly income that covers expenses, gets savings, and occasionally purchases some extras. Additionally, half of the sample is either married or in a couple. The level of digitalization is remarkable, with over a half of the sample (52%) having an app dedicated to wine or wine tourism on the smartphone (WAPP) and a relevant share (45%) buying wine online (BUYWONLINE). The level of involvement with wine (WI) is relatively high, albeit not remarkably (mean value = 5). Among the psychographic variables, future intentions to partake in wine tourism (FUTWTINT) and the willingness to support local wineries (SUPLOCW) record significant mean ratings (both around 6). Interestingly, both fear and anxiety towards Covid (CPH) and the interest in online wine tourism experiences (INTOWE) show low mean values (3.6 and 3, respectively).

Table 1 Descriptive statistics of the sample (n=408).

	frequency	%			frequency	%
Age			***Do you have a wine/wine tourism app?***			
18-29	74	18.1		No	197	48.3
30-40	121	29.7		Yes	211	51.7
41-50	102	25.0	***Do you buy wine online***			
51-60	82	20.1		No	225	55.1
≥61	29	7.1		Yes	183	44.9
Education						
High school	12	2.9			**Mean**	**St. Dev**
College	127	31.1	**Ego-involvement with wine (WI)**		5.2	1.65
University	198	48.5	**Covid-phobia (CPH)**		3.6	1.66
Postgraduate	71	17.4	**Interest in online wine experiences (INTOWE)**		3.0	1.39
Gender						
Males	191	46.8				
Females	217	53.2				
Marital Status						
Married/cohabiting	107	26.2				
Single	139	34.1				
In a couple	96	23.5				
Separated/divorced	57	14				
Widowed	7	1.7				
Other	2	0.5				
Income						
Insufficient	3	0.7				
Just sufficient	34	8.3				
Sufficient	194	47.5				
Good	177	43.4				

	Strongly disagree						Strongly agree	Mean	St.Dev.
	1	2	3	4	5	6	7		
FUTWTINT	0.7	1.5	2	6.6	8.8	16.2	64.2	6.3	1.23
SUPLOCW	1.2	1.7	3.7	9.3	15.4	18.9	49.8	5.9	1.39

Note: n=408.

Structural Equation Modelling

A preliminary exploratory factor analysis of the whole measurement model (MM) is carried out through SPSS software to provide preliminary evidence of the discriminatory power of the MM. The EFA is performed with maximum likelihood as the extraction method and oblique rotation including all items of the latent constructs, i.e., covid phobia (CPH), involvement with wine (WI), future wine tourism intentions (FUTWTINT), willingness to support local wineries (SUPLOCW) and interest in online wine tourism experiences (INTOWE). EFA confirmed the items of the latent constructs load on different factors. The two items of the INTOWE scale are significantly correlated among them r = 0.84; (Gie Yong & Pearce, 2013) while being fairly uncorrelated with all other items in the MM. CPH and WI scales show no criticalities and optimal Cronbach's alpha values. Confirmatory factor analysis (CFA) and Structural Equation Modelling (SEM) are further performed with AMOS software. Table 2 shows the results of the CFA on the whole sample. Construct Reliability (CR) and Average Variance Extracted (AVE) are above the recommended thresholds for all latent constructs (CR > 0.7; AVE > 0.5; Costello & Osborne, 2005; Hair, Black, Babin, & Anderson, 2018), and all standardized factor loadings significant and above the ideal threshold (0.7; Hair et al., 2018). Therefore, convergent validity for each scale is confirmed (Hair et al., 2018). Discriminant validity is also supported by AVE exceeding inter-construct correlations (Hair et al., 2018).

Single item measures for FUTWTINT and SUPLOCW are included in the MM and SM as single-item latent constructs with 0.85 best-guess reliability. This approach has been preferred in order to account for the measurement error and provide a more realistic estimate (Hair, Black, Babin, & Anderson, 2019). Regarding INTOWE, the two items are constrained to equality and all-item parcelling is applied based on Matsunaga (Matsunaga, 2008) guidelines. Notably, a composite score of the two items is computed (parcel) and used as an indicator of the INTOWE. Specifically, factor loading is fixed at 1.0, and error variance is calculated as follows:

$$\theta\varepsilon = (1 - \alpha) \times s^2$$

Where α represents the construct reliability for INTOWE, and s^2 is the observed variance of the composite score. Goodness-of-fit (GOF) of the MM is evaluated through Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Residual (SRMR) for absolute fit, and Tucker Lewis Index (TLI) and Comparative Fit Index (CFI) for incremental fit. Overall GOF of the MM is acceptable ($\chi2$ (408) = 387.83; df = 75; p < 0.001; $\chi2$/df = 5.17;

RMSEA = .09; CFI = .93; TLI = .91; SRMR = .04). According to Hair et al. (2019), the significance of χ2 is expected due to both the large sample size (n = 408) and the number of observed variables (m = 14). RMSEA is also acceptable (Ullman, 2006). Mediation is analysed through bootstrapping (1000 bootstrapping intervals) with bias-corrected confidence intervals (C.I. 95%). This technique provides estimates without relying on distribution, and it constitutes a reliable tool to test for indirect effects and control for multivariate normality issues (Hair et al., 2019; Ryu & Cheong, 2017).

Table 2 Factor loadings and reliability of the measurement model

	Factor loading [a]	Average Variance extracted (AVE)[b]	Construct Reliability (CR)[c]
Interest in online wine tourism experiences (INTOWE)		84.6%	0.92
I am interested in taking part in online wine tastings - INTOWE1	0.91		
I am interested in taking part in online oeno-gastronomic events - INTOWE2	0.93		
Fear and Anxiety towards Covid (CPH)		82.8%	0.95
The fear of coming down with coronavirus makes me very anxious - PSYC1	0.90		
I am extremely afraid that by travelling me/ my family might become infected by the coronavirus - PSYC2	0.84		
News about coronavirus-related deaths causes me great anxiety - PSYC3	0.86		
After the coronavirus pandemic, I feel extremely anxious when I see people coughing - SOC1	0.82		
After the coronavirus pandemic, I actively avoid people I see sneezing - SOC2	0.75		
Involvement with wine (WI)		73.2%	0.95
I have a strong interest in wine - ENJ3	0.83		
I wish to learn more about wine - ENJ2	0.89		
For me, drinking wine is a particularly pleasurable experience - ENJ1	0.89		
People come to me for advice about wine - EXP1	0.90		
Much of my leisure time is devoted to wine-related activities - EXP2	0.87		
I have invested a great deal in my interest in wine - EXP3	0.85		
wine represents a central life interest for me - EXP4	0.76		

Note: [a] Based on standardized regression weights from AMOS. [b] AVE was computed based on the formula from Hair et al. (2019) as an indicator of convergent validity. [c] CR was computed based on Hair et al. (2019).

Table 3 Constructs correlation matrix

	INTOWE	CPH	WI	WTINT	SUPLOCW
INTOWE	3.0 (1.89)				
CPH	0.195	3.6 (1.66)			
WI	0.376	0.024	5.2 (1.65)		
WTINT	0.312	0.064	0.669	6.3 (1.23)	
SUPLOCW	0.153	0.055	0.069	0.261	5.9 (1.39)

Note: Mean (Std. Deviation) of each variable are reported in the diagonal.

4. Results

The structural model (SM) is presented in figure 1. Goodness of fit (GOF) indices suggest an overall acceptable fit ($\chi2$ (408) = 539.77; df = 135; p < .001; $\chi2$/df = 3.99; RMSEA = .08; CFI = .92; TLI = .90; SRMR = .05) and the model explains 22% of the variance of INTOWE and 49% of FUTWTINT. Results highlight that the interest for online wine tourism experiences is positively affected by gender, particularly by being a woman (β = .11; p = .03), and by respondents' wine-digitalization (H7: β = .12, p = .03; H8: β = .13; p = .02). Unexpectedly, the effect of age on INTOWE is not significant (β = - .05; p = .44). WI represents a significant predictor of both future wine tourism intentions (H2; β = .62; p < .001) and INTOWE, although the effect on the latter is smaller in size (H1: β = .22; p = .003). Interestingly, FUTWTINT does not significantly predict INTOWE (H9: β = .05; p = .47), while the direct effect of fear and anxiety towards the virus (CPH) is significantly positive (H5: β = .18; p < .001). Instead, no mediation of CPH on the effect of FUTWTINT on INTOWE (FUTWTINT → CPH → INTOWE) is detected (H6: β = .01; p = .22). Finally, willingness to support local wineries (SUPLOCW) has a significant positive effect both on INTOWE (H3: β = .12; p = .02) and on FUTWTINT (H4: β = 20.0; p < .001). Table 4 summarizes the hypothesis tested and the related outcomes based on the SM results.

Table 4 Summary of the hypotheses tested and related outcomes

Hypothesis tested	Outcome
H1. Involvement with wine (WI) positively affects interest in online wine tourism.	Supported
H2. Involvement with wine (WI) positively affects future wine tourism intentions.	Supported
H3. Willingness to support local wineries (SUPLOCW) positively affects the interest in online wine tourism.	Supported
H4. Willingness to support local wineries (SUPLOCW) positively affects future wine tourism intentions.	Supported
H5. Covid-related fear and anxiety (CPH) positively affect the interest in online wine tourism.	Supported
H6. Covid-related fear and anxiety (CPH) positively mediate the relationship between future wine tourism intentions and the interest in online wine tourism.	Not supported
H7. Having an app on wine/wine tourism on the smartphone (WAPP) positively affects the interest in online wine experiences.	Supported
H8. Purchasing wine online (BUYWONLINE) positively affects the interest in online wine experiences	Supported
H9. Future intention to go on a wine holiday (FUTWTINT) positively affects interest in online wine experiences.	Not supported

Figure 1 Results of the SEM analysis
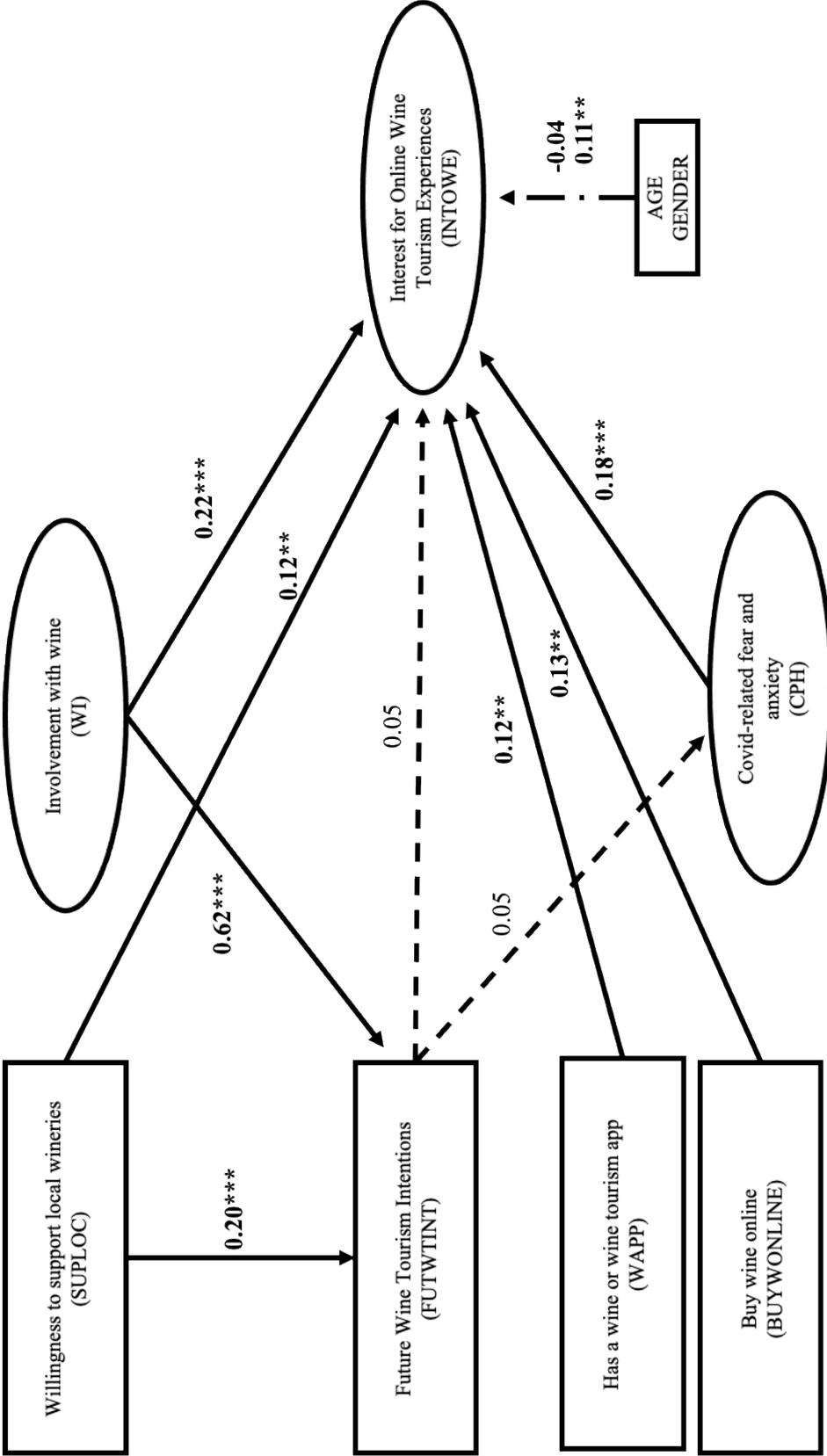
Note: n = 389; ***p < .01; **p < .05; *. Significant paths at 95% C.I. are represented with a continuous line and the related structural weights are reported in bold. Constructs are represented by ovals, while observed variables are marked as rectangles.

5. Discussion and conclusions

The present study provides relevant information for a better understanding of people's interest in online wine tourism experiences, which have become an important strategic tool for wineries in times of pandemic. In the last decade, wine tourism gained increasing relevance for Italian wine regions, but recently the Covid outbreak jeopardised its dynamics, pushing its actors (e.g., wineries) to find alternative solutions to overcome the new Covid barriers. The digitalisation of wine tourism experiences is one of these solutions. Nevertheless, designing similar experiences requires the proper infrastructure, knowledge of virtual platforms and video making, and financial investments to adopt this innovation. Therefore, there is the urge to explore how such experiences are driven by context-dependent factors and the potential for future developments. In the latter case, Online wine experiences can become a strategic marketing tool for wineries and wine regions to create loyalty and attract new visitors.

Although other attempts have been made to explore wine consumers' perception of online wine tastings (Paluch & Wittkop, 2021), this paper is the first to examine the determinants of online wine tourism attractiveness based on a large sample of Italian wine tourists. Therefore, its findings provide valuable hints to both actors of the wine sector and policymakers.

Descriptive statistics reveal that the profile of the wine tourists is in line with the literature: indeed, they tend to be highly educated travellers who enjoy a good economic situation (Asero & Patti, 2011; Brandano, Osti, & Pulina, 2018; Steve Charters & Ali-Knight, 2002; Kolyesnikova, Dodd, & Laverie, 2007; Nella & Christou, 2014). The average level of involvement with wine is above the mean score of the scale (i.e., 4), but it is not remarkably high and presents a significant standard deviation. Although these data confirm the relevance of involvement as a key trait of wine tourists (Brown et al., 2007; Nella & Christou, 2014; Sparks, 2007), they also stress the point that modern visitors of wine regions are not necessarily wine lovers (Sigala & Robinson, 2019).

While future wine tourism intentions are strong, the average interest for online wine tourism in the analysed sample is lower. In our opinion, this latter evidence can be explained by the fact that online wine tourism experiences represented a relatively new product at the time of data collection, namely the timeframe immediately after the so-called "first wave" of infection (from March 2020 to May 2020). In light of the latest advances undergone by online wine experiences, which wine consortia and national sector promoters as the German wine Institute have implemented, new data should be collected to explore how the wine tourists' interest in

such innovative products has evolved in different countries with the progress of the pandemic, as well as to provide information on the profile of their customer.

The primary result from this pioneering study is that the interest in online wine tourism experiences (INTOWE) is affected by several factors, and not all of them are context related. Surprisingly, the influence of future wine tourism intentions (FUTWTINT) on INTOWE is insignificant. Moreover, the same path is not mediated by Covid-related fear and anxiety (CPH), suggesting that the interest in joining an online wine tourism experience is not necessarily the result of a pre-existing willingness to go on a wine holiday. Most importantly, it reveals that online wine tourism is not a substitute for conventional wine tourism when fear and anxiety of Covid become limiting factors, but rather is a separate product. OWE interest is, instead, the result of a combination of the general fear of coming down with the virus (CPH) and a long-lasting involvement with wine (WI). Precisely, although involvement with wine shows a more significant effect on FUTWTINT, it also constitutes the primary antecedent of INTOWE among the ones analysed. Moreover, the fact that ego-involvement with wine is a substantial predictor of INTOWE, as opposite to future wine tourism intentions, suggests that online wine tourism products may also attract cultural tourists possessing a degree of wine interest. Considering these findings and the marketing role of OWEs for rural destinations, future analyses should extend to cultural tourists and explore potential group differences in terms of interests in OWE, motivations to join them and expectations based on travellers' interest and involvement with wine.

Unlike what emerged in tourism studies referring to conventional travel intentions (Luo & Lam, 2020), CPH directly impacts INTOWE with an effect size comparable to WI. Since its effect is positive, the threat represented by Covid-19 has increased the attractiveness of safer wine tourism alternatives like OWEs, which do not expose to uncontrolled human contacts.

As expected, moreover, variables referring to wine digitalisation (WAPP and BUYWONLINE) positively impact INTOWE, confirming that familiarity with wine-related digital tools significantly increases the interest in online wine tourism. Also, this finding suggests that wine apps and e-commerce platforms may effectively advertise online wine tourism experiences and target potential consumers. Unexpectedly, gender differences are present while age does not significantly determine interest in online wine experiences. This result can be imputed to the limited share of older wine tourists in the sample and the increased familiarity with digital tools prompted by the pandemic (Gammon & Ramshaw, 2020), but further research is needed to explore the reasons behind this non-significant relationship. Finally, willingness to support local wineries significantly predicts future wine tourism intentions and OWEs interest. This

constitutes an encouraging signal for wine tourism stakeholders, who should emphasise in their communication strategies the role of solidarity and financial support to the local economy played by both in-presence and online wine tourism. Moreover, this finding provides empirical evidence of the relevant connection between wine tourism and the desire to support local communities by buying locally produced food, nurturing their development (Cranfield, Henson, & Blandon, 2012; Giampietri, Koemle, Yu, & Finco, 2016; Testa, Galati, Schifani, Di Trapani, & Migliore, 2019). This can produce a positive outcome for farmers, who rely on rural tourism as a source of income and remarks the importance of wine tourism as a tool for sustainable development of rural areas, in line with goal 12.b of UNWTO's Agenda 2030.

Results of the present study, though, refer exclusively to specific types of OWEs: online wine tastings and oeno-gastronomic experiences. In contrast, virtual wine tours are not explored and constitute an interesting topic for future research. As previously mentioned, new data could help assess if the relevance of context-related antecedents changes with the pandemic's evolution, particularly after the introduction of the vaccine. The choice of snowball as a sampling technique represents a limitation, particularly due to self-selection bias issues and over-representation of subgroups with similar characteristics (Robins Sadler, Lee, Lim, & Fullerton, 2010). However, snowball sampling has been widely applied to tourism and social science studies (see, for instance, Baltar & Brunet, 2012; Park & Stangl, 2020). Moreover, the large sample size and the socio-demographical diversity of respondents contribute to overcoming its limitations. As the phenomenon of online wine experiences was at a primordial stage when the study was performed, its nature is mainly exploratory and entirely focused on interest for OWEs. This opens a new research stream to investigate wine tourists' behavioural intentions and actual behaviour towards OWEs.

To sum up, findings of the present work suggest the presence of both a long-run and a short-run motivational force behind the interest in online wine tourist experiences. Therefore, the online wine experiences market is not exclusively driven by the fear of the virus but is connected to a long-term product involvement, leaving room for future developments. It also suggests that this kind of experience should not be seen as a temporary and safer substitute for regular wine tourism. Instead, it can constitute a marketing tool for wineries and destination management operators (DMOs) to keep connections with existing consumers alive or attract new ones (Sznolnoki, Thach, & Dani, 2016). Online wine tourism experiences can bring several advantages for wineries: first, they can overcome spatial and geographical barriers, reach a broader audience of potential consumers, and boost the international diffusion of wine and wine regions. Second, diversely from other digital marketing actions, they preserve the

possibility of direct contact with the final consumer as it happens with in-presence visits. Finally, virtual wine tourism activities can also be provided during the low season, thus becoming a tool to attract tourists during the pre-decisional and pre-actional stages of travelling (Bamberg, 2013).

With this in mind, the actors of the wine tourism sector should try to implement and promote an offer of virtual wine tastings and food and wine events having a long-term perspective in view, rather than solely as a tool to cope with Covid restrictions. On the other hand, policymakers could facilitate farmers to overcome the objective technological boundaries characterising the sector, both at a national and firm-level. Financial and technical support is crucial to implementing broadband infrastructures, jointly with specialised training for wineries and small-medium wine tourism enterprises (e.g., farms), to level up their digitalisation. The latter, jointly with proximity tourism, are two necessary steps towards more sustainable and advanced wine tourism, which have been fostered by the Covid outbreak but from which there is no way back.

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Chapter 5 – Exploring demand characteristics and preferences for Online wine tastings through a combined choice experiment – latent class approach[11]

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Keywords: Online wine tourism; consumer preference; demand segmentation; choice experiment; wine involvement; latent class

The Covid-19 pandemic has put the wine tourism sector to a stern test, raising the need to develop new strategies to adapt to the changes imposed, such as mobility restrictions and social distancing (Gastaldello et al., 2021). The phenomenon of online wine tastings (OWT) represents one of these strategies. As the name suggests, online wine tastings allow consumers to join a wine tasting from the comfort of their home by pre-ordering the wines to be tasted and further joining the experience via the internet through video-conferencing platforms such as Zoom or Google Meets (WeinPlus, 2021).

In many European countries, OWTs are increasingly adopted by wine consortia and organisations (e.g., Consorzio Conegliano Valdobbiadene Prosecco, German wine Institute), who use it to promote regional wines and wine tourism destinations. The phenomenon is gaining attention also among academics, who recently explored consumers' perception of virtual wine tastings through the 4Es experience economy framework (Paluch & Wittkop, 2021), the effect of online embodiment during virtual wine tastings on purchase decisions

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[11] This chapter is an edited version of the extended abstract: Gastaldello, G., Rossetto, L., Giampietri, E., (2021). *wine tourism goes virtual: a latent-class model applied to wine tourists' preferences for virtual wine tastings*, accepted to the 2022 American wine Business Research (AWBR) conference.

(Wen & Leung, 2021), and the impact of context and of the tasting environment during in-presence and VR-simulated wine tastings (Torrico et al., 2021). Notably, virtual reality (VR) emerged as a strategic tool for developing multisensory wine tourism offers (Martins et al., 2017).

A recent study conducted by Szolnoki et al. (2021) explored the online wine tastings (OWTs) supply involving over 1000 wineries in 40 different countries. Results identify online wine tastings as a valuable and profitable business tool that attracts new customers and keeps existing ones loyal. Indeed, the authors highlight that OWTs are here to stay. The diffusion of this tool during Covid is also prompted by the behavioural rethinking pushed by the pandemic, which brought consumers to get more familiar with online platforms (Alaimo, Fiore and Galati, 2020) and to increase the use of digital tools (UNCTAD, 2020).

The strategic value of OWT is multifaceted: it can be used to attract curious wine consumers who want to get familiar with a specific brand or with the regional wines and as a tool for customer retention.

OWTs can be a strategic tool to establish new emotional bonds or reinforce the existing ones. Indeed, product experience is a fundamental component of loyalty to a brand (Stokburger-Sauer, Ratneshwar and Sen, 2012). In this regard, OWTs create brand loyalty by providing customers with the chance to taste wines from specific producers or regions while interacting directly with the winemaker.

Moreover, the literature highlights that developing tourism experiences that embody oeno-gastronomic traditions generate positive emotions (Garibaldi, 2020a; Richards, 2012) and create a sense of familiarity (Baloglu, 2001). By delivering familiarity and interacting with consumers, online wine tourism providers establish an emotional bond with the place that can affect consumers' future behavioural intentions (i.e., future wine tourism visits).

Therefore, online wine tourism experiences can help wine tourism actors (DMOs and wineries) to attract future visitors and build long-term relationships with them through long-distance actions, triggering trust and destination attachment (Chen & Phou, 2013).

OWT adoption has increased during the pandemic as a resilience tool. A recent report by Garibaldi (2020b) emerged that 32% of wineries from a sample of Italian and Spanish wine producers implemented OWTs. As argued by Szolnoki et al. (2021), OWT contributed to overcoming the inevitable losses experienced by wineries and wine tourism operators during Covid-19. Nevertheless, its potential encourages us to believe it represents a valid tool for territorial and business marketing in the long run. Indeed, OWT represents a concrete source of differentiation and innovation of the wine tourism offer, both at the destination level and for

wineries. In this respect, Sigala (2020) affirms that "COVID-19 has further enhanced the role of technologies in the recovery and re-imagination of tourism". In fact, OWT has revolutionized the wine tourism industry paving the way to new research avenues.

While wine researchers have already investigated OWTs supply (e.g., Szolnoki et al., 2021), little is still known on the demand side. Notably, there is a lack of knowledge on consumer preferences and characteristics regarding this innovative offer. Such information is vital for wineries to better design OWTs and effectively target the right market.

The present study aims at filling this gap through a choice experiment (CE) to analyse consumers' preferences and willingness to pay for specific attributes of OWT. The attributes considered are:

- the winery size (winery): 1 = small winery; 2 = big producer
- winery distance (dist): 1 – in my region; 2 = in another Italian region; 3 = in a foreign country
- the popularity of the wine area in which the winery is located (warea): 1 = emerging; 2 = popular
- the guide leading the tasting (guide): 1 = winemaker; 2 = wine expert
- discount on future purchases from the winery (promo): 0 = no; 1 = yes
- and the price of the experience (price): 1 = 45€; 2 = 60€; 3 = 75€; 4 = 90€.

Given the topic's novelty, the attributes and the respective levels are defined based on OWT experiences currently sold on the Italian market and retrieved from online travel agencies (OTAs).

A D-optimal experimental design is implemented. Specifically, we include 24 choice sets divided into four blocks (relative D-efficiency: 51%). We then obtained priors for the D-optimal design from a pilot study involving 30 Italian wine tourists. The CE is part of a structured questionnaire including psychographic information, wine consumption, wine purchase and wine tourism habits, and socio-demographics. All scales are adapted from the literature and measured through 7-points Likert-type scales. Additionally, we collect information about the motivation behind participating in an OWT experience.

The final sample consists of 500 wine tourists (125 for each block) involved in the data collection through an online research agency. It is representative of the Italian population in terms of age, gender, and geographical region of residence.

Specifically, males and females are present in the same percentage (50% each), 45.3 % of respondents are part of a family with children and declare an average income either between 2000€ and 4000€ (50.3%) or lower (38.8%). The majority (51.5%) graduated from high school, and 33.5% obtained a university degree. Age classes are distributed as follows: 10.4% are 18-24 years old; 12.7% are 25-34 years old; 25.8% are 35-44 years old; 20.6% are 45-54 years old; 23.26 are 55-64 years old; 7.33 are 64 years old or more.

For data analysis, a multinomial logit model (ML) is first estimated to obtain the marginal utility of each attribute. Subsequently, a latent class model (LC) is applied to identify the presence of unmeasured sub-groups of customers in the sample based on preferences heterogeneity. Specifically, latent classes are created, maximizing preferences homogeneity within the same group and maximizing heterogeneity between groups. Segments (commonly defined classes) are further characterised through other observed variables. In the present study, we include socio-demographic and psychographic characteristics and wine consumption habits and motivations to join an OWT. The models are estimated through Stata software. Table 1 reports the preliminary results for the multinomial logit model (ML).

Table 1 Results of the multinomial logit model

Multinomial logistic regression					Number of obs = 10,062
					Replications = 50
					Wald chi2(6) = 786.33
					Prob > chi2 = .0000
Log likelihood = -5975.9278					Pseudo R2 = .0669
choice	Observed coefficient	Bootstrap sdt. Err.	z	P>|z|	Normal based [95% conf. interval]
0	(Base outcome)				
1					
price	.0106011	.0010515	10.08	.000	.0085402 - .012662
promo	-.2114543	.0445155	-4.75	.000	-.2987032 - -.124206
guide	.2862913	.0482139	5.94	.000	.1917938 - .380789
warea	.1915971	.047394	4.04	.000	.0987065 - .284488
dist	.1134057	.0294884	3.85	.000	.0556095 - .171202
winery	-.0156761	.0484229	-0.32	.746	-.1105832 - .079231
constant	-1.660505	.0510979	-32.50	.000	-1.760655 - -1.56036

Note: n=500.

Results of the multinomial logit model (Table 1) reveal positive coefficients for price, guide, wine area (warea) and distance with the place of residence (dist). At the same time, an adverse effect emerged from the presence of a declared promotion in the product description (promo). Therefore, on average, respondents in the sample are willing to pay higher prices for online tasting experiences, prefer OWTs offered by providers of famous wine regions located far from their area of residence, and are guided by wine experts. Diversely, declaring a promotion on future purchases in the product description lowers the odds of purchasing the OWT. The popularity of the winery (winery) is insignificant.

Based on the AIC and BIC values listed in Table 3, the model with 3 latent classes is preferred. Table 2 reports the preliminary results of the LC analysis with three latent classes.

Table 2 Results of the Latent Class model

Class1 (19%)	Less demanding leisure tourists	Class2 (11%)	High-end niches explorers	Class3 (70%)	Reputation seekers
price	-.00478	price	0.122***	price	.0115***
	(.00354)		(.0332)		(.00133)
promo	- .434***	promo	-2.633*	promo	.0103
	(.138)		(-1.364)		(.0431)
guide	.110	guide	- .604	guide	.309***
	(.150)		(.514)		(.0445)
warea	- .0106	warea	2.851***	warea	.137***
	(.133)		(.804)		(.0483)
dist	- .234***	dist	.437	dist	.132***
	(.0868)		(.498)		(.0295)
winery	.0420	winery	-4.994***	winery	.285***
	(.140)		(-1.135)		(.0460)
Share1		*Share2*			
age	.0342***	age	.0129		
	(.0123)		(.0125)		
gender	.237	gender	.948***		
	(.284)		(.340)		
edu	.130	edu	.0669		
	(.203)		(.227)		
income	- .210	income	.239		
	(.232)		(.252)		
WIH	- .349***	WIH	.116		
	(.132)		(.144)		
wconsfreq	.00452	wconsfreq	.0831		
	(.125)		(.141)		
wsaleschD5	.00194	wsaleschD5	- .231		
	(.687)		(.829)		
motwtrav_wine	- .485	motwtrav_wine	- .457		
	(.316)		(.363)		
avpriceinform	- .519***	avpriceinform	- .217		
	(.160)		(.165)		
OWTmot4	1.203*	OWTmot4	1.365*		
	(.646)		(.759)		
OWTmot1	- .0457	OWTmot1	.0156		
	(.523)		(.576)		
OWTmot3	.398	OWTmot3	.459		
	(.452)		(.509)		
OWTmot5	1.793***	OWTmot5	.428		
	(.527)		(.719)		
_cons	- .381	_cons	-4.617***		
	(-1.193)				

*Note: n=500 . Standard errors are reported in parentheses. * p < .1, ** p < .05, *** p < .01.*

Table 3 AIC and BIC values for latent class model selection

n° classes	LLF	n. param	CAIC	BIC
2	-3064.57	26	6319.6	6293.6
3	-2953.60	46	6244.2	6198.2
4	-2925.11	66	6333.8	6267.8

The LC analysis identified 3 groups of customers: less demanding leisure tourists, who prefer OWTs offered by wineries closer to their area of residence and are not attracted by promotions included with the purchase of the experience; high-end niche explorers, who are also negatively affected by the presence of promotions in product's description but are willing to pay more for OWTs and look for OWT offered by small wine producers located in popular wine regions; and reputation seekers, who share the same preferences ad the previous group in terms of price but look for OWTs from popular wine producers from respectable wine areas far away from where they live, conducted by wine experts. The latter segment also constitutes the largest class (70%; Table 3). Compared to reputation seekers, less demanding leisure tourists tend to be older and less involved with wine (WIH = - .349; $p < .0001$), investing on average less money to purchase the product (avpriceinform = - .519; $p < .0001$). Coherently, they see OWTs as a way to have fun (OWTmot5 = 1.793; $p < .0001$). Instead, high-end niche explorers are likely to be females who appreciate OWTs economic convenience (OWTmot4 = 1.365; $p < .9$). Lastly, the strong orientation of high-end niche explorers to small winemakers suggests a need for authenticity. The latter is an important motivational force for engaging with wine tourism experiences (Bruwer & Rueger-Muck, 2018; Quadri-Felitti & Fiore, 2016) and is easily found in small, family-run businesses.

Information provided by this research represents an essential contribution to the development of OWTs, in light of their increasingly recognised marketing potential. As highlighted by Szolnoki et al. (2021), OWTs are indeed promising and inexpensive tools to reach a wider audience of customers while overcoming geographical, physical, and economic barriers.

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CONCLUSIONS

Although the world has already experienced shocks due to viruses' outbreaks (e.g., Ebola and SARS), terrorism, or natural disasters like Tsunamis, the extent and the duration of the Covid pandemic are unparalleled. Indeed, while most previous events caused localised shock-specific consequences, the Covid-19 induced profound and interconnected changes pervading all economies and societies worldwide. As previously mentioned, the barriers created by the spread of the virus are both physical, such as government-imposed travel restrictions, and psychological, connected to fear of infection and the related risks. Subsequently, this event projected consumers into a "new normality" to which they adapted by changing their lifestyle and behaviour.

In this scenario, the wine sector has long been a pillar of the Italian economy: indeed, the country is a top wine producer and exporter worldwide. Italians are also the third consumer of wine, and the habit of consuming this alcoholic beverage is an integral part of people's habits. Regular wine drinking is strongly connected to specific contexts such as social occasions like the *aperitivo* and meals. Nevertheless, since habits are context-dependent actions (Wood, Tam, & Witt, 2005), the considerable context changes brought by the pandemic may have compromised Italian's wine-drinking behaviour.

But the threat does not end with the Covid-19 pandemic. As medical research highlights (e.g., Houghton, 2019), new pathogens are emerging rapidly, making the world progressively more vulnerable to new pandemic events. Indeed, our world is now globally connected to the point that if a potential threat appears in a remote corner of the world, it would easily and quickly diffuse elsewhere through the fleets of people moving every day from one country to another (Houghton, 2019). Accordingly, tourism is the most exposed industry in the case of new pandemics since airline travels represent a catalyst for the spread of airborne diseases (Klontz et al., 1989; Moser et al., 1979).

As we have witnessed during the current pandemic, the economic cost of the necessary measures to contain the spread of the virus for tourism is impressive, especially for international tourism flows.

These consequences have inevitably hit wine tourism, which has considerably expanded and attracted a growing number of international tourists from all over the world in the last decades. Indeed, wine travels have become a new, common way of consuming wine and its place of origin for consumers other than wine lovers and wine experts. Given the sector's relevance for

local businesses and its vital role in fostering the sustainable development of rural areas, understanding if and how the pandemic reshaped wine tourism intentions is critical.

The research carried out in this project aims to answer the need to enhance the knowledge on the consequences of the pandemic on wine consumers' behaviour, intended as both wine drinkers and wine tourists.

Chapter 1 results on Italian wine consumers underline that the habit of drinking wine is strong and survived the profound context modifications of the pandemic. Nevertheless, the disruptive effect of the lockdown emerges on wine consumption frequency and purchase patterns. Indeed, most Italian wine consumers changed their wine drinking frequency while in lockdown. Health concerns trigger negative modifications, potentially pushed by consumers re-evaluating personal priorities and past behaviour. Coherently, reduced wine drinking is connected to a lower consumption frequency for other alcoholic beverages.

Furthermore, this behavioural change is affected by gender differences, which could relate to differences in handling stress and psychological pressure. This outcome calls for further research to assess whether such behavioural re-evaluation is maintained as the pandemic progresses. If this is the case, it would be interesting to explore if the appeal of emerging niches like low-alcohol wine has increased for specific consumer segments.

Diversely, parenting emerged as a factor pushing people to drink more frequently, suggesting that stress played a role in moderating wine consumption. Although quantitative information on the alcohol intake is not recorded, the fact that an increase in wine consumption frequency is connected to a simultaneous rise of other alcoholic beverages brings to light the potential role of psychological discomforts in promoting alcohol consumption. This perspective claims attention from national authorities, which should consider and monitor the negative psychological impacts of the restrictions applied to stop the spread of the virus on public health. On a different note, an interesting finding regards the boost to online wine shopping during home confinement. Online shopping has become essential after the Covid outbreak since the pandemic has hindered tourism flows and cellar door visits, which represent important sources of income for many wineries. Other primary sales channels like restaurants and hotels were closed or operating at low capacity, enhancing online sales' economic relevance. According to our results, the lockdown induced wine consumers to step outside their comfort zone and try online e-commerce services for the first time. Although our sample's lower share of elderlies may have skewed results favouring online wine sales, our findings align with market data evidencing a positive trend for wine e-commerce. Therefore, wine producers should invest time and resources in implementing an e-commerce service or

improving the existing one. It further calls for support from governments and competent authorities, which should assist farmers in this digital transition by providing adequate technical and financial tools.

Regarding the consequences of Covid-19 on wine tourist behaviour, studies presented in chapter 2 and chapter 3 highlight that the pandemic has generally boosted the intention to partake in wine tourism. Personal involvement with wine confirmed its crucial role in driving future intentions to go on a wine holiday for all the wine tourism markets studied. The fact that wine tourists dedicated time to exploring their interest in wine positively impacts their behavioural intentions, mediating the effect of personal involvement as an antecedent. Academically, this result highlights the relevance of situational involvement, intended as a state of involvement triggered by context changes, for wine tourism research. In this regard, the studies constitute a necessary advance in the knowledge on involvement as a driver of wine tourism intentions. Indeed, to the best of the author's knowledge, most wine tourism research considers exclusively personal involvement. Furthermore, the two studies (chapters 2 and 3) provide a validated and parsimonious empirical tool for capturing the effects of situational involvement in wine research, which demonstrated consistency in different cultural contexts. As for managerial implications, results suggests that effective communication campaigns carried out in the early stages of travel planning can concretely impact the decision to go on a wine holiday. Since the scale adopted to capture the situational involvement effect includes several online activities, this result stresses the importance of online communication and content creation to attract new visitors. The studies mentioned above, though, focus solely on intention. Future research should further investigate the impact of situational involvement on wine tourists' behaviour and test this relationship. However, the negative effects of the pandemic emerged as well. A considerable share of European and US respondents declared their family income has reduced following the Covid-19 outbreak.

According to our model, though, the worsening of the economic situation did not compromise wine tourism plans: instead, its effect is positive. Furthermore, since most wine tourists in the sample are usually day-trippers, results suggest proximity is still a crucial attribute for the wine tourism industry (Getz & Brown, 2006). Despite the economic relevance of international tourism flow for wine tourism is increasing and it is not neglectable, this finding is vital as proximity enhances sectors' resilience in a context where mobility is subject to restrictions. Lastly, the effect of Covid phobia shows opposite results in the USA and European samples. Notably, European wine tourists are inhibited by Covid phobia. On the contrary, in the USA sample, the path between wine tourism intentions in the next 12 months and the variable is

positive (although significant at p < .9). It must be noted that data collection for the two studies took place in two distinct moments of the pandemic evolution, implying a different perception of the threat represented by the Covid-19 virus. Indeed, the vaccine was already available at the time the USA data were collected, and the related variable capturing its effect was used as a control for Covid phobia. Although rural areas tend to be perceived as safer in case of threats (Park, Kim, Kim, Lee, & Giroux, 2021; Song, Qiu, & Park, 2019), our results suggest that the outcome of this perception relationship might change depending on the nature of the threat itself, and at which stage of the phenomenon data are collected. Coherently, risk perception may change as the scenario connected to the threat evolves (Villacé-Molinero, Fernández-Muñoz, Orea-Giner, & Fuentes-Moraleda, 2021).

The USA model also highlights how the attitude towards risk connected to wine holidays discourages wine travels despite the positive effect of Covid phobia, competitively mediating the latter path. Moreover, the negative effect of risk aversion is boosted by greater fear and anxiety for Covid-19. While risk attitude is innate, the literature highlights that risk perception is affected by how information around the potential source of risk is delivered (Neuburger & Egger, 2020; Sönmez & Graefe, 1998). Therefore, unproperly communicated official and unofficial communications can produce detrimental effects for tourism. In line with Kozak et al. (2007), authorities can counteract the potential adverse effects of risk perceptions by providing timely and transparent information regarding the risk source and how it is handled: this is crucial to allow tourists to make informed and conscious choices. In the Covid-19 scenario, keeping tourists updated on new cases and the safety measures to limit the risk of infection is vital. At the same time, institutions and sector stakeholders should carefully choose the appropriate media to deliver such information to avoid creating panic instead of instilling confidence. The European study also evidences the presence of cross-cultural differences between French and Italian wine tourists' behaviour during the current health crisis, particularly about the effects of covid phobia and situational involvement (i.e., acquired interest in wine during the lockdown). In light of the study's exploratory nature, further research is needed to corroborate our findings and explore such differences further.

A key advance of chapter 2 and 3 studies lies in the simultaneous modelling of positive and negative factors shaping wine tourism intentions, while most existing literature solely focuses on positive drivers like motivations and involvement. As discussed in the introductory chapter, this approach is even more paramount for scenarios like the Covid-19 pandemic, and it is very much needed to prevent having a short-sighted comprehension of the phenomenon since

constraints have a significant impact on travel decisions (Cho, Bonn, & Brymer, 2014; Sigala & Robinson, 2019)

Another valuable contribution of the present work to future wine tourism research and industry comes from the investigation of one leading sector evolution prompted by the Covid-19 crisis: the transition of wine experiences online. Sigala affirms that Covid-19 has strengthened the role of technology as a driver of innovation and resilience, calling for more research advancing "our knowledge for informing, fostering, shaping or even leading such crises-enabled transformations" (2020, p. 313). Coherently, as argued in the previous chapters, this massive market shock triggered industry innovation and fostered the creation of a new market for online wine experiences. The adoption of online wine experiences has increased during the Covid-19 pandemic, where these tools became vital to compensate for the economic losses caused by the restrictions in place. Hence their market relevance as a resilience strategy. Their use has been growing ever since, with both single winemakers and local promoting institutions such as consortia implementing online wine tourism. In line with other authors (Szolnoki, Lueke, Tafel, & Blass, 2021; Thach, 2021), the research presented in chapter 4 highlights that the potential of online wine experiences goes beyond the short-term need to survive the pandemic. Indeed, they do not represent a temporary, safer alternative to in-presence wine tourism experiences. Nevertheless, fear of being infected by the virus and the health risks connected to Covid-19 fuel interest in such products, underlining the role of shocks in promoting behavioural changes and the importance of sector practitioners to be "at the right time, in the right place".

Moreover, the model proposed in chapter 4 provides evidence that such experiences are more attractive to highly involved wine consumers, who are acknowledged as willing to make more significant financial and time investments to pursue their interest in the product. Since implementing similar experiences implies limited advertising efforts and financial assets, online wine tourism can concretely become a new sale channel for wineries. Like in wine tourism, though, the profitability of online experiences is strictly connected to the quality of the product delivered. Therefore, providers must guarantee professionalism through suitable video and audio quality and by selecting an appropriate hosting platform. To do so, wineries should possess at least basic technical skills and have access to adequate instrumentation and internet connection, all elements representing limiting factors. Recalling what was said for wine e-commerce, sector organisations and policymakers should assist practitioners in this transition by providing training courses and guaranteeing adequate broadband infrastructure in rural areas. Academically, this pioneering study paves the way to a new research branch in wine

tourism, which to date has focused chiefly on cellar doors visits while emerging market segments have been neglected.

In this regard, the preliminary findings discussed in chapter 5 constitute the first effort towards a more profound knowledge of the market of online wine tastings (OWTs), which are currently one of the primary products leading the abovementioned transition. Remarkably, the study identifies three demand segments in the Italian market: less demanding leisure tourists, high-end niche explorers and reputation seekers, constituting the largest group. The final results will guide sector practitioners and destination management operators (DMOs) towards staging successful experiences by highlighting consumers' profiles and priorities.

Another significant finding of this dissertation is the role of solidarity as a driver of wine tourism intentions. As discussed in chapter 2 and chapter 4, the willingness to support local producers by purchasing their wines strengthens the intention to visit a wine region in the future. Indeed, the models underline the connection between the desire to visit a wine region and buy locally produced specialities to support the local economy. Most importantly, this is true also for online wine tourism. This result emphasises consumers' sensitivity to sustainability issues, which the Covid-crisis have potentially strengthened (Cappelen, Falch, Sørensen, & Tungodden, 2021). It also highlights the importance of rural tourism, either in presence or online, as a tool for sustainable development, a paramount objective of Agenda 2030 and of the U.S - sustainable development goals. In line with these observations, future research should tackle this issue by exploring how solidarity can affect willingness to pay for local products when visiting a rural destination and how sustainability-related certifications affect travel choices and behaviour. Moreover, as discussed in chapter 1, solidarity towards national wine producers promotes increased wine consumption frequency in lockdown while reducing it. Therefore, solidarity and nationalism constitute vital drivers of wine tourism intentions and local wines consumption in times of crisis.

Finally, the wine tourism studies conducted in the present work enrich the scarce body of literature on Old World wine tourism and upgrade existing knowledge on both Old World and New World wine tourists. In doing so, they provide information that will help sector stakeholders to address the growing challenges of an increasingly competitive market.

To conclude, this doctoral thesis offers a comprehensive and up-to-date overview of wine tourism and how the Covid-19 pandemic affected wine consumers and wine tourists' behaviour, with a careful eye on the industry's future. If this traumatic event shed light on the known vulnerability of the industry, it also highlighted its resilience and responsiveness to shocks as with the virtual transition of tourism experiences. In this regard, the pioneering

studies in the present work deliver relevant information on the drivers of the online wine tourism phenomenon and the characteristics of its demand, which are lacking. Since the pandemic is still undefeated, the knowledge on wine consumers' behaviour provided by this research contributes to a crucial step forward in the short run, to help practitioners overcome the difficulties brought by this complex historical event, and in the long run, to be prepared for new similar occurrences as well as to future sector evolutions.

KEY PRACTICAL IMPLICATIONS AND FUTURE RECOMMENDATIONS

The first key implication of this work is the online transition of wine sales and wine tourism experiences fuelled by the Covid-19 pandemic. Competent authorities and policymakers should not neglect this phenomenon, ensuring wineries and wine tourism stakeholders have adequate infrastructures and supporting them with proper financial and technical help. This is even more paramount considering the remarkable positive impact of situational involvement on travel intentions: one effective way to create situational involvement can be precisely through online activities and marketing campaigns.

Secondly, willingness to support local wineries emerged as a vital antecedent of wine tourism intentions highlighting the role of wine holidays in supporting rural development.

Another implication comes from the negative effect of Covid-phobia and risk attitude on wine tourism intentions, raising concerns on the potentially detrimental impact of communication on risk perception. Although this issue should be further investigated, regional and national authorities and destination management operators (DMOs) should place particular attention to official and unofficial communications regarding Covid-19 and the related risk to ensure transparent and properly conveyed information.

Lastly, even if wine consumption is a crucial part of Italian consumers' habits, Covid-19 may have prompted long-term behavioural re-evaluations connected to healthier lifestyles that may affect wine consumption and purchase patterns. Nevertheless, our results show that the lockdown increased the consumption frequency of alcoholic beverages for a slice of respondents, raising concerns about home confinement's adverse psychological and health effects. Therefore, governments should carefully evaluate the application of similar restrictions to control the health crisis, especially for prolonged periods, since they may lead to high social and financial costs in the long run.

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