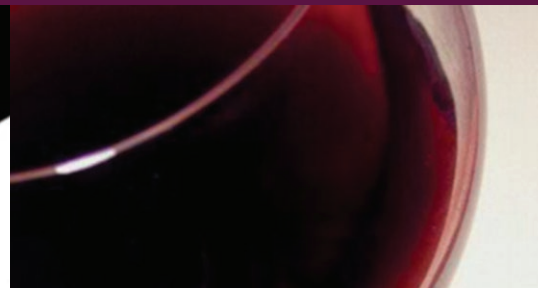




WEP

Wine Economics Policy^{and}



Production and
hosting by



Volume 11 Issue 1 June 2022 ISSN 2213-3968



Wine Economics and Policy

Volume 11, Issue 1 - 2022

Firenze University Press

Wine Economics and Policy is an international, peer reviewed and open access journal published by UniCeSV - Centre for the Strategic Development of the Wine Sector, University of Florence.

The mission of the journal is to provide an environment for academic researchers and business professionals around the world to work together in the fields of wine economics and policy in order to deal with the current and future issues of the wine sector.

Editor in-Chief

Silvio Menghini, University of Florence, Italy

Co-Editors in-Chief

Eugenio Pomarici, University of Padova, Italy

Nicola Marinelli, University of Florence, Italy

Regional Editors

ASIA

Huiqin Ma, College of Information and Electrical Engineering, China Agricultural University, China

EUROPE

Etienne Montaigne, IAMM - Mediterranean Agronomic Institute of Montpellier, France

NORTH AMERICA

Liz Thach, Sonoma State University, USA

SOUTH AMERICA

Alejandro Gennari, Universidad Nacional de Cuyo, Argentina

OCEANIA

Larry Lockshin, University of South Australia, Australia

Business Editors

Vittorio Frescobaldi, Marchesi de' Frescobaldi srl

Peter Hayes, Honorary (former) President of the OIV; President Lien de la Vigne/Vine Link; Presiding Member, Wine Australia Board Selection Committee; Member, Wine Australia Geographic Indications Committee

Editorial Office (Scientific Managers)

Veronica Alampi Sottini, University of Florence, Italy

Contacts:

Scientific Manager:

Veronica Alampi Sottini

email: wepjournal@fup.unifi.it

Department of Agriculture, Food, Environment and Forestry (DAGRI) - University of Florence
P.le delle Cascine, 18 - 50144 Florence (I)

Editor in-Chief

Silvio Menghini,

email: silvio.menghini@unifi.it

Department of Agriculture, Food, Environment and Forestry (DAGRI) - University of Florence
P.le delle Cascine, 18 - 50144 Florence (I)

Published by

Firenze University Press – University of Florence, Italy

Via Cittadella, 7 - 50144 Florence - Italy

<http://www.fupress.com/wep>

Copyright © 2022 Authors. The authors retain all rights to the original work without any restrictions. Open Access. This issue is distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY-4.0) which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The Creative Commons Public Domain Dedication (CC0 1.0) waiver applies to the data made available in this issue, unless otherwise stated.



Citation: Vasco Santos, Alvaro Dias, Paulo Ramos, Arlindo Madeira, Bruno Sousa (2022) The influence of wine storytelling on the global wine tourism experience. *Wine Economics and Policy* 11(1): 3-13. doi: 10.36253/wep-11454

Copyright: ©2022 Vasco Santos, Alvaro Dias, Paulo Ramos, Arlindo Madeira, Bruno Sousa. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/wep>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

The influence of wine storytelling on the global wine tourism experience

VASCO SANTOS¹, ALVARO DIAS^{2,*}, PAULO RAMOS³, ARLINDO MADEIRA⁴, BRUNO SOUSA⁵

¹ ISLA Santarém, Santarém, Portugal and CiTUR, Leiria, Portugal. Email: vasco.ribeiro@islasantarem.pt

² Universidade Lusófona/TRIE and ISCTE-IUL. Email: alvaro.dias1@gmail.com

³ CBQF, Porto, Portugal and Fernando Pessoa University, Porto, Email: pramos@ufp.edu.pt

⁴ Tourism and Hospitality Management School, Universidade Europeia, Portugal and ESCAD-School of Science and Administration, Lisbon, Portugal. Email: arlindo.madeira@universidadeeuropeia.pt

⁵ IPCA - Polytechnic Institute of Cávado and Ave, Barcelos, Portugal and CiTUR, Coimbra, Portugal. Email: bsousa@ipca.pt

*Corresponding author.

Abstract. The aim of this paper is to evaluate the role of wine storytelling as an antecedent in the wine tourism experience, namely on other constructs such as winescape attributes, sensorial attraction, wine excitement and cultural experience. This study analyses the combined use of five wine tourism experience dimensions as well the influence of storytelling as a key antecedent of the wine experience. This study extends existing knowledge by identifying new key drivers which focus on wine tourist behavioural responses within visits to the wine cellars. Data were collected within two wine tourism settings in Madeira and Porto wine cellars, from two convenience samples of 647 international wine tourists. Using partial least square structural equation modelling, the results reveal a direct impact of wine storytelling on the several dimensions of the wine tourism experiences. Furthermore, storytelling was found to directly influence wine excitement, and indirectly both outcome variables (wine excitement and cultural experience), through the mediating effect of winescape attributes and sensorial attraction.

Keywords: wine tourism, wine storytelling, cultural experience, winescape attributes, wine excitement, sensorial attraction.

1. INTRODUCTION

Wine tourism has long ceased to be just a visit to wine producing regions and wineries, just to taste or buy wine. In fact, wine tourism has become more complex as a tourist product, due to the requirement of visitors to obtain a differentiated experience, composed of multiple elements [1]. It is unquestionable that wine is an important cultural and heritage element, especially for the wine-producing regions of the 'Old World' (Europe) [2].

The tourist's involvement with the region visited results in a state of "wine excitement", which starts with decision-making about the trip and extends throughout the visit [3]. This wine excitement makes the visitor more receptive to absorbing the stories that make the wines, the producer and the region stand out in their minds and make it a memorable experience. It is widely accepted that the wine tourism experiences should involve not only the wines and local gastronomy, but also the surrounding environment and its culture and traditions [4]. One of the factors that wine tourists value is the interaction with the staff involved in the wine tourism process, not only due to their know-how about the wines and the region, but mainly through the narratives around the wine, its production, and its surrounding environment. These narratives are composed of stories that involve the producers and their wines, as well as local myths and legends, its culture, and its traditions [5]. Thus, it is essential that all staff involved in complementary services to the wine experience consider the importance of storytelling as an enhancing factor in the holistic experience that constitutes a wine visit and tasting in a wine-producing region [4]. In fact, wine tourists, and in particular the wine lovers, value not only wine as a draw for the visit, but also all moments of interaction with the owner, managers, winemaker, and line staff [6]. Visitors want to know more, want to know exclusive stories that they have not yet read anywhere, the secrets of the winemaker in the design of a particular wine or the history of the estate, and to meet the producer's family and discover the surrounding region. Wine tourism storytelling happens in parallel with the sensorial immersion of the visitor in the culture of the region, the winescape that surrounds him and the experiences in the wine producer facilities [7]. This interaction between the stories, the local myths and legends and the sensory immersion of visitors is a factor that need to be further explored by researchers. The visitor, when immersed in the region through his senses, is not only more likely to accept the narrative that involves the visit but will also enjoy the experience more [8]. Therefore, the use of the narrative that involves the wine tourism experience can be used to position the region, its wines, and its producers in the minds of visitors and consumers. This study aims to evaluate the role of wine storytelling as an antecedent in the wine tourism experience. More specifically, intends to explore the influence of wine experience elements (winescape attributes, sensorial attraction, wine excitement and cultural experience) on wine excitement and cultural experience. Furthermore, this study also aims the indirect effects in the relation between storytelling and the same outcome variables (on wine

excitement and cultural experience). A literature review relating construct domain, scale items and hypothesis development is followed by the methodology approach applied and then the results obtained. Finally, the conclusions, implications, and future research directions are presented. Data was collected in Madeira and Porto wine cellars, obtained from two convenience samples of 647 international wine tourists, and structural equation modelling (SEM-PLS) was applied.

2. LITERATURE REVIEW

2.1. Key concepts

2.1.1. Wine storytelling

Regarding wine tourism, the use of storytelling values rather than relying only on the region's image is of paramount importance. Therefore, attention should be focused on the particularities of each winery and its producer, through the opinions of visitors, writers and critics who visit the region, expressed in magazines, blogs and online comments and word of mouth (WoM) [9]. Producers use narrative to tell the story of the property, the brand, and its wines, which allows an emotional connection to be established with visitors, who are also consumers [5]. This emotional connection that allows visitors to absorb the cultural heritage, from social and landscape elements of the region and its producers, often starts with wine tasting [2]. By establishing an emotional connection with visitors, producers can position themselves in their minds as "brands of love". This positioning allows them to differentiate themselves from their competitors, whether they are regions or direct competitors [7]. For the story to capture the attention of visitors, the narrative must contain elements of authenticity and emotion that coincide with the intention of the visit [5]. The fact that each region and producer use different grapes and vinification methods, allied to the specific conditions of the wine terroir and the winescape, allows personalized narratives to be built [2].

2.1.2. Sensorial attraction

The experience of wine tourism is coated with hedonism, as wine is a product that aims to offer sensations that give us pleasure through the senses [4]. The sensory experience when tasting wines is transversal to any visitor, regardless of their level of knowledge about oenology and the ability to distinguish the characteristics of the wines or the most professional method of

tasting them [10]. The sensory analyses of wines tasted at the winery is influenced by the involvement with winescape and affect perception, memory, and emotions, regarding wines, the producer and the wine region [11]. This multisensory emersion in an aesthetically appealing environment, which includes vineyards, the wine cellar, and the landscape, optimizes the wine tasting [12]. Hence, senses are the means of how visitors will perceive the various dimensions that make up the wine experience. Therefore, the greater the involvement of the senses, the greater the probability of the experience becoming memorable [13]. In addition, wine tourism provides an experience of pleasure through the involvement of the various senses with the region where the wine is produced in all its dimensions: aesthetics, culture, entertainment, and escapism [14].

2.1.3. Winescape attributes

The attractiveness and authenticity of each region's winescape is, together with the quality of the wines produced, a determining factor in deciding whether to visit a wine region [14]. The concept of winescape incorporates physical attributes such as the specificity of the region's vineyards (the way they are planted and integrated into the landscape), the use of indigenous grapes, oenological practices and techniques, the wineries (including their architecture), restaurants (within the property or in the winescape context), and wine-related museums and shops where visitors can buy wines they tasted [15]. The concept of winescape has been extended to the socio-cultural components of the wine region to incorporate the culture and heritage of each region, which reinforces its capacity to attract visitors, promoting dialogue between humans and the environment [16]. The use of the sociocultural elements of the wine landscape can trigger and inspire the spiritual involvement of wine tourists and thus maximize wine experiences [17]. This broader concept of winescape, which incorporates the physical attributes, but also the sociocultural elements of each region, is essential for the promotion and renown of the image of the region, of each producer and of the wines produced there, through the myths and stories that compose the regional culture [8].

2.1.4. Cultural experience

Tasting wines in the region where they are produced is a cultural and educational experience for visitors [3]. The sensory experience of wine tasting is thus reinforced by its cultural and educational character, which allows

visitors to increase their knowledge about the wines, in the specific terroir where they are produced [18]. In this context, the winery staff, especially the winemaker, has a decisive role because they can share details and techniques used in making the wines, which delight the wine lovers [6]. This cultural perspective of the wine experience plays a fundamental role in creating memories in the minds of the visitors and spreads through the sharing of their experiences with potential visitors [1]. The cultural experience of wine tasting in its region of origin is interpreted differently by each visitor, considering cultural factors and the level of knowledge and emotional involvement with the wines and the wine region [19]. Cultural heritage is increasingly important in the design of the wine tourism product, not only for the educational component, through the authenticity and novel elements that each destination presents, but also for the sense of nostalgia that allows the visitor to connect with the past of the region and each producer [20].

2.1.5. Wine excitement

The enthusiasm and excitement of consumers towards wine is related to their degree of involvement with the product [21]. Consumers with a high level of enthusiasm and excitement have more knowledge about the world of wine and react differently to wine attributes, compared to less knowledgeable consumers [22]. For the connoisseur or expert, the visit to a wine region is the culmination of a long period of time dedicated to a passion for wine and everything that surrounds it. Connoisseurs look for unique sensations through wine tasting in the region they choose to visit and its setting [23]. However, visitors who do not usually consume wine, termed novices, should also be considered for analysis, because although they are not as enthusiastic about wine, they have other motivations that make them visit the producing regions [6]. The excitement resulting from the consumption and wine tasting within the region therefore provides different sensations from visitor to visitor, due to their personalities, motivations, and level of involvement with wine [24].

2.2. Hypothesis development

2.2.1. The key role of storytelling on wine experience

Storytelling around wines and their producers is invariably linked to the region to which they belong, and to their terroir (climate, soils, and grapes). Hence, the narrative of a wine cannot be separated from the winescape

where it is produced [25]. According to [26], storytelling about places is recognized as a tool to enhance the reputation of regions as they compete for tourism and economic development spending in the digital age. Through digital media, people can be encouraged to tell their tourism stories and share their experiences [27]. Storytelling around wine is essential to stimulate the imagination of visitors, through a powerful narrative that serves as a script for the wine tourism experience to develop [28]. The ability to tell stories and use them to create a context conducive to action is probably a skill as old as wine itself. These stories should include elements that attract the attention of visitors, causing excitement around the region and its wines [29]. Wine as a cultural product act as a catalyst between culture, history, and landscape, through storytelling [28]. Each sip of wine not only fills the mouth with sensations, but simultaneously fills the mind with images and the soul with feelings [25]. As such, we hypothesize:

- H1a: Storytelling positively relates to winescape attributes
- H1b: Storytelling positively relates to sensorial attraction
- H1c: Storytelling positively relates to wine excitement
- H1d: Storytelling positively relates to cultural experience

2.2.2. Winescape attributes and wine experience

Wine landscape, in a comprehensive view, is a set which includes landscape, heritage and cultural attributes and which, when well are aligned, makes the visitor feel emotionally involved with the wine region [22,23]. This emotional alignment through the attributes of the wine region is reflected in a visitor's predisposition towards the context where the wine experience occurs [30]. The winery staff and other players, including the owners, who work in the wine tourism system, use storytelling, through a well elaborated narrative, which helps to frame the experience and connect visitors with the cultural wine setting where it occurs [2]. In turn, if the narrative does not make sense with winescape and local culture, it will be ignored and will not have the expected emotional effect [5]. For instance, and according to Kruger and Viljoen [31], place, and subsequently the sense of a place, has become a major research theme within tourism. The wines produced in a region establish a relationship with the traditions and its inhabitants and with the local history and heritage, because they are the main motivation that gives rise to the visit [14]. The essence of wine tourism is, therefore, based on the exploration of the various senses through the experiences provided by the elements that constitute the winescape [13]. Hence, the hypotheses are as follows:

- H2a: Winescape attributes are positively related to wine excitement
- H2b: Winescape attributes are positively related to cultural experience
- H2c: Winescape attributes mediate the relation between storytelling and wine excitement
- H2d: Winescape attributes mediate the relation between storytelling and cultural experience

2.2.3. Sensorial attraction and wine experience

In wine tourism, the sensory experience of tasting wine is reinforced by the sensations that the attributes of winescape provide to visitors [32]. Place, destinations, cities, and regions offer distinctive characteristics beyond the physical geographic and topographic elements, especially concerning produce from a particular area, region, country or territory [31]. This multisensory experience is based on the search for new hedonic sensations, arising from visitors' emotional connection to wine, the region and its culture and heritage [13]. A considerable number of studies have focused on the effects of wine tourists' motivations on behavioural intentions [33]. The search for sensations through the wine tourism experience varies according to the level of involvement and excitement of the visitor with the wines, the region, and its attributes [23]. The sensory stimulus caused by the atmosphere surrounding the wine visit, coupled with a compelling narrative, optimizes the experience, and contributes to a sense of excitement [3], and plays a key role in the wine experience [34]. Furthermore, the improvement of the wine experience, was also found to enhance the destination image [35]. It is through storytelling that the region as a whole and each producer individually can involve visitors and transport them to another emotional level, which allows them later to consider the experience not only as positive [33], but memorable [5]. The use of storytelling in wine tourism allows the visitor to absorb the history of the producer and the wine brand, the region heritage, its myths, traditions, and rituals, based on three narrative styles: descriptive, immersive, and technical [7]. Drawing on these premises, the hypothesis is as follows:

- H3a: Sensorial attraction is positively related to wine excitement
- H3b: Sensorial attraction is positively related to cultural experience
- H3c: Sensorial attraction mediates the relation between storytelling and wine excitement
- H3d: Sensorial attraction mediates the relation between storytelling and cultural experience

Figure 1 depicts the hypothesized relationships.

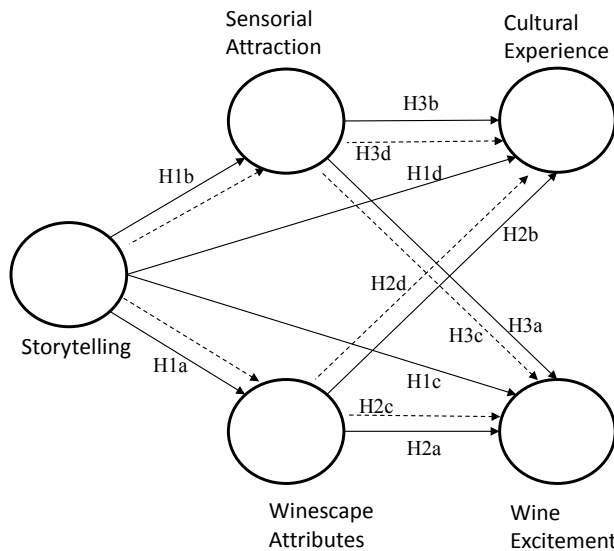


Figure 1. Conceptual model. Note: The dashed lines represent the indirect relationships.

3. METHODOLOGY APPROACH

3.1. Data collection and sample design

The data was gathered from the sample of international wine tourists visiting Madeira and Porto wine cellars between July and September 2019, because it directly coincides with the period of the greatest flow of wine tourists to this kind of wine tourism product and destination. The questionnaire was multilingual, in English, Spanish, French and Portuguese. In total, 647 complete self-administered questionnaires were obtained (321 in Madeira and 326 in Porto) and were collected in two weeks in Madeira and two weeks in Porto, to obtain a sample that was large enough to overcome the limitations of its convenience sampling method [36,37]. These questionnaires were attained in a post-visit setting (immediately after the visit).

The questionnaire was pretested and the definition of some of its dimensions came from the results of previous research [11,38]. The questionnaire was divided in an initial section focused on demographic data about the respondent, and a second section composed by the variables measures. This section incorporated a total of twenty-seven items derived from pre-existing measures (in appendix): wine storytelling, sensorial attraction, winescape attributes, cultural experience, and wine excitement. The constructs were measured using a five-point likert scale, where 1 = ‘totally disagree’, and 5 = ‘totally agree’.

3.2. Data analysis procedures

The conceptual model was tested using survey data analysed through structural equation modelling (SEM) by means of variance-based partial least squares (PLS) with the SmartPLS 3 software [39]. The first step consisted of assessing the quality of the measurement model through reliability, convergent validity, internal consistency reliability and discriminant validity [40]. The reliability of each construct was tested by analysing that the standardized factor loadings of the items were superior to 0.7 (between 0.720 and 0.922, all significant at $p < 0.001$) [40]. To provide further test of the reliability, we also calculated the Cronbach’s alpha and composite reliability (CR) values of each construct.

To test the convergent validity, we followed a three-step approach. First, we confirmed that all constructs’ items loaded positively and significantly in each construct. Second, it was verified that all the CR values for all the constructs were above the cut-off value of 0.70. Third, we also confirmed that the average variance extracted (AVE) for all constructs was higher than 0.50 [41]. To evaluate the discriminant validity, we used the Fornell and Larcker criterion and the heterotrait-monotrait ratio (HTMT) criterion [38,40].

After analysing the quality of the measures, we then verified the quality of the structural model using the magnitude of the coefficient of the determination R^2 value for each endogenous variable. The model quality estimation was also complemented using Stone-Geisser’s Q^2 [40]. The constructs’ collinearity was also evaluated as suggested by [38]. To test the hypotheses, bootstrapping with 5,000 subsamples was used to evaluate the significance of the parameter estimates.

To test the mediation hypotheses, we followed the recommendations of [40] (p. 232). Thus, we used a bootstrapping procedure to test the significance of the indirect effects via the mediator [45].

4. RESULTS

Regarding sample profile, the sample is quite balanced in terms of gender, most coming from United Kingdom, France, Portugal, and Germany, with the majority being adults between 25 and 54 years of age. 49.7% of the respondents were male and declared having higher education. Table 1 provides additional detail about the sample.

The results of Cronbach’s alpha and CR were superior to 0.7 as indicated in Table 2, providing additional evidence for the individual indicator reliability.

Table 1. Sociodemographic set profile of the sample.

Age	Education level	Country of origin
18-24 years old (7.1%)	Less than high school graduate (3.7%)	Portugal (8.3%)
25-44 years old (42.3%)	High school graduate (18.5%)	Spain (5.6%)
45-64 years old (43.8%)	Degree (43.8%)	France (24.7%)
More than 65 years old (6.8%)	PhD (6.8%)	Germany (7.7%)
		United Kingdom (25.9%)
		Other (27.8%)

Table 2. Composite reliability, average variance extracted, correlations, and discriminant validity checks.

Latent Variables	α	CR	AVE	1	2	3	4	5
(1) Winescape Attributes	0.894	0.919	0.654	0.809	0.841	0.798	0.849	0.749
(2) Sensorial Attraction	0.847	0.897	0.687	0.782	0.829	0.832	0.841	0.710
(3) Wine Excitement	0.941	0.955	0.809	0.740	0.759	0.899	0.848	0.743
(4) Cultural Experience	0.886	0.914	0.640	0.772	0.743	0.784	0.800	0.695
(5) Storytelling	0.945	0.958	0.819	0.693	0.642	0.702	0.640	0.905

Note: α – Cronbach's Alpha; CR – Composite reliability; AVE – Average variance extracted. Numbers in bold are the square roots of AVE. Below the diagonal elements are the correlations between the constructs. Above the diagonal elements are the HTMT ratios.

Table 3. Structural model assessment.

Path	Path coefficient	Standard errors	<i>t</i> statistics	<i>p</i> values
Winescape Attributes * Wine Excitement	0.235	0.092	2.565	0.011
Winescape Attributes * Cultural Experience	0.424	0.092	4.598	0.000
Sensorial attraction * Wine Excitement	0.391	0.091	4.320	0.000
Sensorial Attraction * Cultural Experience	0.323	0.087	3.695	0.000
Storytelling * Winescape Attributes	0.693	0.037	18.599	0.000
Storytelling * Sensorial Attraction	0.642	0.039	16.263	0.000
Storytelling * Wine Excitement	0.288	0.082	3.509	0.000
Storytelling * Cultural Experience	0.140	0.067	2.072	0.039

Regarding the Fornell and Larcker criterion, the AVE square root (diagonal bold values in Table 2) was larger than its biggest correlation with any construct [41]. The HTMT ratios are lower than 0.85 [38,40], thus providing evidence of discriminant validity. The R^2 of the endogenous variables (winescape attributes; sensorial attraction; wine excitement; cultural experience) were 60.7%, 55.7%, 67.6%, and 67.5%, respectively. Since these values are higher than 10% [42], the model's predictive accuracy was assured. The Q^2 values for all endogenous variables (0.31, 0.27, 0.53, and 0.41 respectively) were positive, providing additional evidence of the model's predictive relevance. The VIF values were estimated (ranging from 1.00 to 3.04) and they were lower than the threshold value of 5 [38], revealing no collinearity problems.

The results in Table 3 and Figure 2 indicate that the winescape attributes have a significantly positive relation with wine excitement and cultural experience ($b = 0.235$; $p < 0.05$; 0.424 , $p < 0.001$), which supports H1a and H1b, respectively. Sensorial attraction has a significantly positive effect on wine excitement and cultural experience ($b = 0.391$; $p < 0.001$; 0.323 ; $p < 0.001$), providing support for H2a and H2b. The results also reveal that storytelling has a significantly positive effect on winescape attributes, sensorial attraction, wine excitement, and cultural experience ($b = 0.693$; $p < 0.001$; $b = 0.642$; $p < 0.001$; $b = 0.288$; $p < 0.001$; $b = 0.140$; $p < 0.05$, respectively). These results provide support for H3a, H3b, H3c, and H3d.

Table 4 presents the results of the mediation effects.

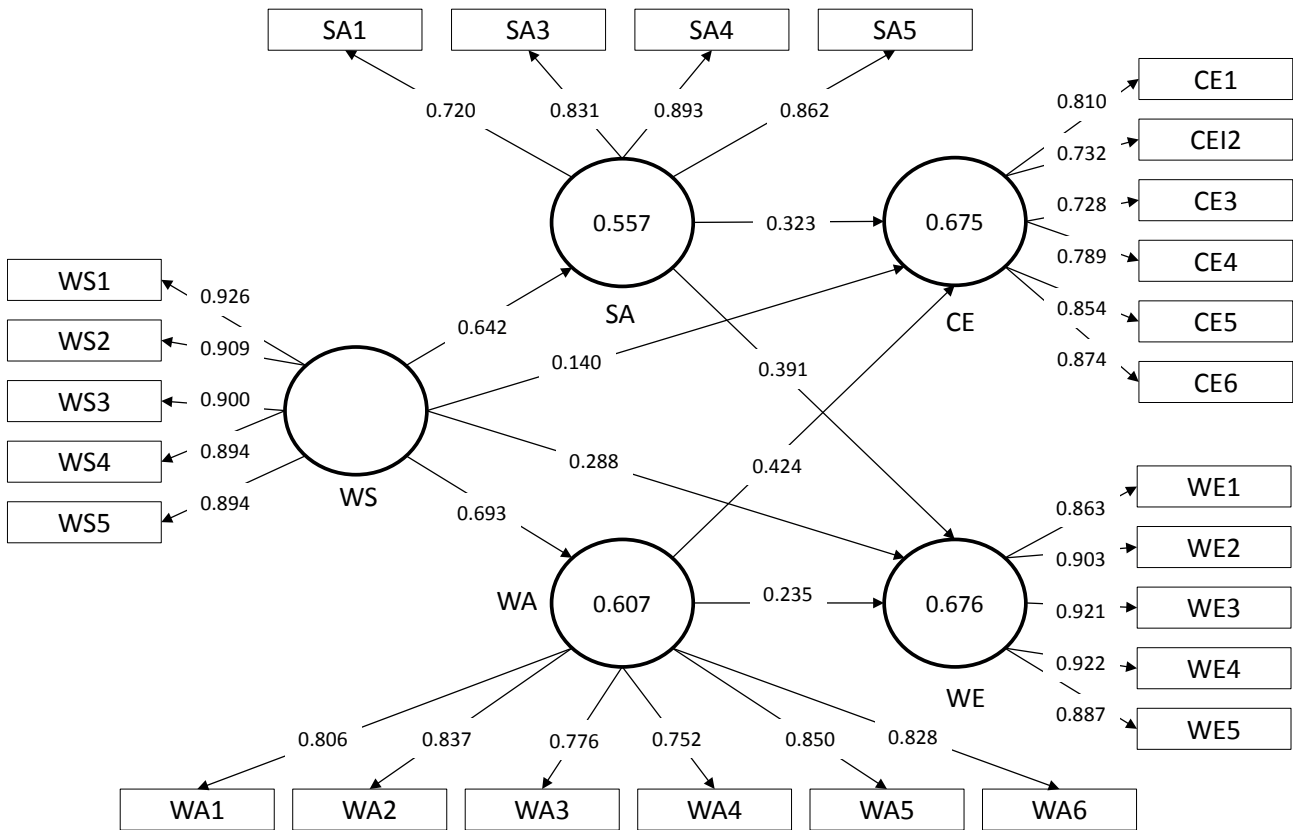


Figure 2. Path model.

Table 4. Bootstrap results for indirect effects.

Indirect effect	Estimate	Standard errors	t statistics	p values
Storytelling * Winescape Attributes * Wine Excitement	0.163	0.064	2.557	0.011
Storytelling * Winescape Attributes * Cultural Experience	0.293	0.067	4.366	0.000
Storytelling * Sensorial Attraction * Wine Excitement	0.251	0.060	4.175	0.000
Storytelling * Sensorial attraction * Cultural Experience	0.207	0.060	3.479	0.001

The indirect effects of storytelling on wine excitement and cultural experience via the mediator of winescape attributes are significant with ($b = 0.163; p < 0.05$) and ($b = 0.293; p < 0.001$), respectively. These results provide support for the mediation hypotheses H1c and H1d, respectively. Furthermore, the indirect effects of storytelling on wine excitement and cultural experience via the mediator of sensorial attraction are significant with ($b = 0.251; p < 0.001$) and ($b = 0.207; p < 0.01$), respectively. Thus, H2c and H2d are supported.

5. DISCUSSION AND CONCLUSIONS

This research established that wine storytelling is a critical factor for the success of a wine visit and tasting. Storytelling has the strongest relationships with both the mediator constructs: winescape attributes and sensorial attraction. This second layer of constructs will, therefore, help to enhance the global outcome of the wine experience expressed in the higher levels of wine excitement and of cultural experience. This suggests a global and synergistic effect between these constructs that shape the overall wine tasting experience. Noticeably, there is also a strong relationship between the winescape attributes and the

cultural experience corroborating the stated relationship between the environmental factors, such as landscape and heritage, and the cultural enrichment felt by the visitor. However, although significant, a stronger relationship between storytelling and cultural experience was expected. This lower level of correlations between these two constructs is probably because the storytelling in these two particular experiences was not completely satisfactory from a cultural enrichment perspective due to the fact that visits still tend to be somewhat standardized.

5.1. Theoretical contributions

Wine Tourism is a phenomenon that moves millions of people around the world, acting as a major driver of the global economy [2,6]. Due to the frequent changes in the tourism environment, every year competition is fostered between and within tourist destinations [46-49]. It is a multifaceted and geographically complex activity [50]. In this context, and according to [30], wine tourism has undoubtedly been a trend which has become cemented by quality and diversity of offer. This manuscript intended to understand and evaluate the role of wine storytelling positively related to winescape attributes, sensorial attraction, wine excitement and cultural experience, during a wine visit experience within two worldwide renowned wine tourism settings. Specifically, storytelling around wine is essential to stimulate the imagination of visitors, through a powerful narrative that serves as a script for the wine tourism experience to develop. The emotional alignment through the attributes of the wine destination regions is reflected in a visitor's predisposition towards the context where the wine experience occurs. The sensory stimuli caused by the environment surrounding the wine experience, coupled with a compelling narrative, optimize the experience, and contribute to a sense of excitement. On the other hand, a cultural experience of wine tasting in its region of origin is interpreted differently by each visitor, considering cultural factors and the level of knowledge and emotional engagement with the wines and the destination [51]. Therefore, the resultant 12 hypotheses were validated, which determines the direct impact of the wine storytelling on wine tourism experiences of wine tourists, through winescape attributes, sensorial attraction, wine excitement and cultural experience.

5.2. Practical and managerial implications

Wine marketers must ensure the improvement of this relational characteristic, since the relationships that

are established between wine brands and consumers can have a positive outcome, such as strong brand loyalty, cost advantages and positive WoM. The new vogue of wine tourism forces us to challenge and revisit the power relationships that exist within contemporary tourism and the host-guest relationship. However, this capacity of providing a good storytelling is not innate for many people. This needs to be deeply incorporated in the business culture of each winery or tasting site. This critical factor may help to differentiate a truly unique experience from just another standardized visit. We recommend extensive programmes of training in storytelling to help provide those on the front line contacting with the tourists with the right skills.

5.3. Limitations and future research

This manuscript has already identified that the global movement of tourism is seemingly towards an increased focus on the niche (wine) product or service. In this case, the question seems to be whether the further growth in demand for wine management and wine tourism products – as a niche tourism example – will continue until they become a form of mass tourism. A future study should include other emotional factors (e.g., brand love, commitment, trust, perceived disconfirmation) (c.f. [52]). As an interdisciplinary approach, this paper contributes positively to the development of theory in relationship marketing and tourism contexts in wine management (theoretical and practical implications). However, the recommendations should be considered within the framework and limitations of the research: a convenience sample and set in two very established but also quite standardized in wine sites terms of visit format. Other research using similar methodological approaches and instruments in a new world setting, can provide different insights on the storytelling relevance and impact on the other constructs.

REFERENCES

- [1] Quadri-Felitti, D., & Fiore, A. M. (2012). Experience economy constructs as a framework for understanding wine tourism. *Journal of Vacation Marketing*, 18(1), 3-15.
- [2] Frost, W., Frost, J., Strickland, P., & Maguire, J. S. (2020). Seeking a competitive advantage in wine tourism: Heritage and storytelling at the cellar-door. *International Journal of Hospitality Management*, 87, 102460.

- [3] Charters, S., Fountain, J., & Fish, N. (2009). "You felt like lingering..." Experiencing "real" service at the winery tasting room. *Journal of travel research*, 48(1), 122-134.
- [4] Bruwer, J., & Alant, K. (2009). The hedonic nature of wine tourism consumption: an experiential view. *International Journal of Wine Business Research*.
- [5] Woldarsky, V. (2019). Tapping into the emotions of the wine consumer through storytelling: A case study. In *BIO Web of Conferences* (Vol. 15, p. 03012). EDP Sciences.
- [6] Charters, S., & Ali-Knight, J. (2000). Wine tourism-A thirst for knowledge?. *International Journal of Wine Marketing*.
- [7] Sousa, B. M. (2019). A theoretical contribution from the perspective of innovation process in wine tourism contexts. *Marketing & Tourism Review*, v. 4, n. 2, 1-18
- [8] Quintal, V., Thomas, B., Phau, I., & Soldat, Z. (2017). Using push-pull winescape attributes to model Australian wine tourist segmentation. *International Journal of Wine Business Research*.
- [9] Dawson, H., Holmes, M., Jacobs, H., & Wade, R. I. (2011). Wine tourism: Winery visitation in the wine appellations of Ontario. *Journal of Vacation Marketing*, 17(3), 237-246.
- [10] López-Guzmán, T., Rodríguez-García, J., Sánchez-Cañizares, S., & Luján-García, M. J. (2011). The development of wine tourism in Spain. *International Journal of Wine Business Research*.
- [11] Santos, V.; Ramos, P.; Sousa, B. & Valeri, M. (2021). Towards a Framework for the Global Wine Tourism System. *Journal of Organizational Change Management*, DOI 10.1108/JOCM-11-2020-0362
- [12] Charters, S., & Pettigrew, S. (2005). Is wine consumption an aesthetic experience? *Journal of Wine Research*, 16(2), 121-136.
- [13] Brochado, A., Stoleriu, O., & Lupu, C. (2021). Wine tourism: a multisensory experience. *Current Issues in Tourism*, 24(5), 597-615.
- [14] Getz, D., & Brown, G. (2006). Critical success factors for wine tourism regions: a demand analysis. *Tourism management*, 27(1), 146-158.
- [15] Bruwer, J., & Gross, M. J. (2017). A multilayered macro approach to conceptualizing the winescape construct for wine tourism. *Tourism Analysis*, 22(4), 497-509.
- [16] Mitchell, R., Charters, S., & Albrecht, J. N. (2012). Cultural systems and the wine tourism product. *Annals of tourism research*, 39(1), 311-335.
- [17] Sigala, M. (2020). The Transformational Power of Wine Tourism Experiences: The Socio-Cultural Profile of Wine Tourism in South Australia. In *Social Sustainability in the Global Wine Industry* (pp. 57-73). Palgrave Pivot, Cham.
- [18] Sparks, B. (2007). Planning a wine tourism vacation? Factors that help to predict tourist behavioural intentions. *Tourism management*, 28(5), 1180-1192.
- [19] Pikkemaat, B., Peters, M., Boksberger, P., & Secco, M. (2009). The staging of experiences in wine tourism. *Journal of Hospitality Marketing & Management*, 18(2-3), 237-253.
- [20] Crespi-Vallbona, M., & Mascarilla-Miró, O. (2020). Wine lovers: Their interests in tourist experiences. *International Journal of Culture, Tourism and Hospitality Research*.
- [21] Barber, N., Ismail, J. and Dodd, T. (2008), "Purchase attributes of wine consumers with low involvement", *Journal of Food Products Marketing*, Vol. 14, p. 1.
- [22] Bruwer, J., & Huang, J. (2012). Wine product involvement and consumers' BYOB behaviour in the South Australian on-premise market. *Asia Pacific Journal of Marketing and Logistics*, 24(3), 461-481.
- [23] Galloway, G., Mitchell, R., Getz, D., Crouch, G., & Ong, B. (2008). Sensation seeking and the prediction of attitudes and behaviours of wine tourists. *Tourism management*, 29(5), 950-966.
- [24] Mitchell, R., & Hall, C. M. (2001). Lifestyle behaviours of New Zealand winery visitors: wine club activities, wine cellars and place of purchase. *International Journal of Wine Marketing*.
- [25] Bonarou, C., Tsartas, P., & Sarantakou, E. (2019). E-Storytelling and Wine Tourism Branding: Insights from the "Wine Roads of Northern Greece". In *Wine Tourism Destination Management and Marketing* (pp. 77-98). Palgrave Macmillan, Cham.
- [26] Bassano, C., Barile, S., Piciocchi, P., Spohrer, J. C., Iandolo, F., & Fisk, R. (2019). Storytelling about places: Tourism marketing in the digital age. *Cities*, 87, 10-20.
- [27] Barhorst, J. B., McLean, G., Shah, E., & Mack, R. (2021). Blending the real world and the virtual world: Exploring the role of flow in augmented reality experiences. *Journal of Business Research*, 122, 423-436.
- [28] Quadri-Felitti, D., & Fiore, A. M. (2013). Destination loyalty: Effects of wine tourists' experiences, memories, and satisfaction on intentions. *Tourism and Hospitality Research*, 13(1), 47-62.
- [29] Rytkönen, P., Vigerland, L., & Borg, E. A. (2019). Georgia Tells its Story: Wine Marketing Through Storytelling.

- [30] Santos, V., Ramos, P., Almeida, N., Marôco, J. & Santos-Pavón, E. (2020). Wine tourist profiling in the Porto wine cellars: segmentation based on wine product involvement, *Anatolia*, 31(4) 577-590.
- [31] Kruger, M., & Viljoen, A. (2021). Terroir wine festival visitors: uncorking the origin of behavioural intentions. *Current Issues in Tourism*, 24(5), 616-636.
- [32] Santos, V., Ramos, P., Almeida, N. and Santos-Pavón, E. (2019), Wine and wine tourism experience: a theoretical and conceptual review, *Worldwide Hospitality and Tourism Themes*, 11(6), pp. 718-730.
- [33] Back, R. M., Bufquin, D., & Park, J. Y. (2021). Why do they come back? The effects of winery tourists' motivations and satisfaction on the number of visits and revisit intentions. *International Journal of Hospitality & Tourism Administration*, 22(1), 1-25.
- [34] Gu, Q., Qiu, H., King, B. E., & Huang, S. (2020). Understanding the wine tourism experience: The roles of facilitators, constraints, and involvement. *Journal of Vacation Marketing*, 26(2), 211-229.
- [35] Wu, G., & Liang, L. (2020). Examining the effect of potential tourists' wine product involvement on wine tourism destination image and travel intention. *Current Issues in Tourism*, 1-16.
- [36] DeVellis, R.F. (2003). *Scale development: Theory and applications*. London: Sage Publications.
- [37] Netemeyer, R.G., Bearden, W.O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*. London: Sage Publications.
- [38] Santos, V., Ramos, P., & Almeida, N. (2017). The relationship between involvement, destination emotions and place attachment in the Porto wine cellars. *International Journal of Wine Business Research*, 29(4), pp. 401-415.
- [39] Ringle, C.M., Wende, S., & Will, A. (2015). SmartPLS3.0. Hamburg:www.smartpls.de.
- [40] Hair Jr, J.F., Hult, G.M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling* (PLS-SEM). Sage Publications.
- [41] Bagozzi, R.P., & Yi. Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74-94
- [42] Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135.
- [43] Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 29-50. DOI:10.2307/3151312.
- [44] Falk, R.F., & Miller, N.B. (1992). *A primer for soft modelling*. Akron: University of Akron Press.
- [45] Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers*, 36(4), 717-731.
- [46] Ferreira, J., Sousa, B. and Gonçalves, F. (2019), "Encouraging the subsistence artisan entrepreneurship in handicraft and creative contexts", *Journal of Enterprising Communities: People and Places in the Global Economy*, Vol. 13 No. 1/2, pp. 64-83. <https://doi.org/10.1108/JEC-09-2018-0068>
- [47] Agapito, D. (2020). The senses in tourism design: A bibliometric review. *Annals of Tourism Research*, 83, 102934.
- [48] Festa, G., Shams, S. R., Metallo, G., & Cuomo, M. T. (2020). Opportunities and challenges in the contribution of wine routes to wine tourism in Italy—A stakeholders' perspective of development. *Tourism Management Perspectives*, 33, 100585.
- [49] Ahmad, A., Jamaludin, A., Zuraimi, N. S. M., & Valeri, M. (2020). Visit intention and destination image in post-Covid-19 crisis recovery. *Current Issues in Tourism*, 1-6.
- [50] Sousa, B. & Rocha, A. T. (2019). The role of attachment in public management and place marketing contexts: a case study applied to Vila de Montalegre (Portugal). *International Journal of Public Sector Performance Management*, Vol. 5, N. 2, pp. 189-205 <https://doi.org/10.1504/IJPSPM.2019.099094>
- [51] Kirova, V. (2021). Value co-creation and value co-destruction through interactive technology in tourism: The case of 'La Cité du Vin' wine museum, Bordeaux, France. *Current Issues in Tourism*, 24(5), 637-650.
- [52] Pina, R. & Dias, Á. (2021). The Influence of Brand Experiences on Consumer-Based Brand Equity. *Journal of Brand Management*, 28(1), 99-115.
- [53] Mora, P., & Livat, F. (2013). Does storytelling add value to fine Bordeaux wines? *Wine Economic Policy*, 2, 3-10.
- [54] Bach, K (2008). *Talk about Wine? Wine and Philosophy*. A Symposium on Thinking and Drinking. Blackwell Publishing: Oxford, UK.
- [55] Dann, G.M., & Jacobsen, J.K. (2002). *Leading the tourist by the nose*. In G. M. S. Dann (Ed.), *The tourist as a metaphor of the social world*, New York: CABI Publishing, pp. 209-236.
- [56] Thomas, B., Quintal, V. A., & Phau, I. (2018). Wine tourist engagement with the winescape: Scale development and validation. *Journal of Hospitality & Tourism Research*, 42(5), 793-828.

- [57] Kim, Y. G., & Eves, A. (2012). Construction and validation of a scale to measure tourist motivation to consume local food. *Tourism management*, 33(6), 1458-1467.
- [58] Pizam, A., Jeong, G., Reichel, A., Van Boemmel, H., Lusson, J. M., Steynberg, L., et al. (2004). The relationship between risk-taking, sensation-seeking, and the tourist behavior of young adults: a cross-cultural study. *Journal of Travel Research*, 42, 251-260.

APPENDIX

Measurement items.

Construct	References	Scale items adjusted to wine visit experience
Wine Storytelling	[53,54]	<ol style="list-style-type: none"> 1. Stories that the wine tour guide/wine storyteller/wine producer told me about wine (wine bottle/brand/family/wine estate/wine-making) positively influenced the value I attribute to the wine 2. Stories that the wine tour guide/wine storyteller/wine producer told me about wine (wine bottle/brand/family/wine estate/wine-making) positively influenced the value I attribute to the wine tasting 3. Stories that the wine tour guide/wine storyteller/wine producer told me about wine (wine bottle/brand/family/wine estate/wine-making) positively influenced the value I attribute to this visit 4. Stories that the wine tour guide/wine storyteller/wine producer told me about wine (wine bottle/brand/family/wine estate/wine-making) enabled me to have an enjoyable time 5. Stories that the wine tour guide/wine storyteller/wine producer told me about wine (wine bottle/brand/family/wine estate/wine-making) enabled me to learn ancient facts about wine that I did not know
Sensorial attraction	[55]	<ol style="list-style-type: none"> 1. It is important to me that this wine I drink smells nice 2. It is important to me that this wine I drink tastes good 3. It is important to me that this wine I drink looks nice 4. It is important to me to touch the bottle of the wine that I drink 5. Tasting this wine results in the activation of my sensory stimuli
Winescape attributes	[56]	<ol style="list-style-type: none"> 1. This wine scenery is attractive 2. This winery landscape has a rural appeal 3. These buildings have historic appeal 4. There is an old-world wine charm in these wine cellars 5. These wine cellars offer spectacular views 6. This architecture gives the winery character
Cultural experience	[57]	<ol style="list-style-type: none"> 1. Experiencing this wine gives me an opportunity to increase my knowledge about different cultures 2. It is important to me to taste this wine in its original region 3. Experiencing this wine enables me to learn what it tastes like 4. Experiencing this wine allows me discover something new 5. Experiencing this wine makes me see the things that I don't normally see 6. Experiencing this wine helps me see how other people live
Wine Excitement	[58]	<ol style="list-style-type: none"> 1. Experiencing this wine in its original wine cellars makes me excited 2. Tasting this wine on holiday helps me to relax 3. Tasting this wine makes me feel exhilarated 4. When tasting this wine I have an expectation that it is exciting 5. Tasting this wine on holiday makes me not worry about routine



Citation: Mikael Oliveira Linder, Katia Laura Sidali, Christian Fischer, Valerie Bossi Fedrigotti, Diego Begalli, Gesa Busch (2022) Assessing preferences for mountain wine and viticulture by using a best-worst scaling approach: do mountains really matter for Italians? *Wine Economics and Policy* 11(1): 15-29. doi: 10.36253/wep-10342

Copyright: ©2022 Mikael Oliveira Linder, Katia Laura Sidali, Christian Fischer, Valerie Bossi Fedrigotti, Diego Begalli, Gesa Busch. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/wep>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Assessing preferences for mountain wine and viticulture by using a best-worst scaling approach: do mountains really matter for Italians?

MIKAEL OLIVEIRA LINDER^{1,2,*}, KATIA LAURA SIDALI³, CHRISTIAN FISCHER¹, VALERIE BOSSI FEDRIGOTTI¹, DIEGO BEGALLI³, GESA BUSCH⁴

¹ Free University of Bozen-Bolzano, Faculty of Science e Technology, Piazza Università, 5, I-39100, Bozen-Bolzano (BZ), Italy. E-mail: christian.fischer@unibz.it, bossister@gmail.com

² CIRAD, UMR Innovation, 73 rue Jean-François Breton, Montpellier, 34898, France. E-mail: mikael.linder@cirad.fr

³ University of Verona, Department of Business Administration, Via Cantarane, 24, 37129 Verona (VR), Italy. E-mail: katialaura.sidali@univr.it, diego.begalli@univr.it

⁴ University of Göttingen, Faculty of Agricultural Sciences, Department of Agricultural Economics and Rural Development, Platz der Göttinger Sieben 5, 37073, Göttingen, Germany. E-mail: gesa.busch@agr.uni-goettingen.de

*Corresponding author.

Abstract. European Commission has recently published the rules on the use of the quality term “mountain product”. The new regulation aims to promote the sustainable development of mountain areas and to facilitate the identification of mountain products by consumers. Despite the importance of viticulture for several European mountain communities and the growing interest of European consumers in quality certified foods, the regulation did not encompass wines. The literature addresses many issues regarding wines and consumer preferences, but so far mountain wines are not specifically researched. With this study, we seek to fill this gap by analysing Italian consumers’ preferences for mountain wines as well as their opinion on the inclusion of this product in the mountain labelling scheme. To do so, this study applies a best-worst scaling model and subsequent latent class analysis. Data was collected through an online questionnaire applied to a consumer panel. The results indicate that most of respondents are in favour of applying the mountain label to wines. The three most preferred attributes are related to human health, ecological sustainability and product typicity. Most of participants gave less importance to the attributes that characterize mountain agriculture. Only one consumer segment valued some of these. Findings suggest that the inclusion of mountain wines in the labelling scheme may convey a better image of wine regarding its impact on human health, environmental sustainability and terroir-based typicity.

Keywords: mountain, wine, viticulture, Italian preferences, best-worst scaling, latent class.

1. INTRODUCTION

“Mountains matter”. According to the international alliance Mountain Partnership there are countless reasons to agree with this slogan. All over the world, mountains cover around 22% of the Earth’s land surface. Mountains are hotspots of biodiversity, provide 60 to 80% of freshwater and shelter a rich cultural heritage [1, 2, 3, 4, 5].

In Europe, mountain areas cover approximately 18.5% of the total land surface [6]. In Italy, they comprise 43.7% of the municipalities and 58.2% of the national territory [7]. Approximately, two-thirds of the economic activities in European mountain areas rely on the primary sector, including mountain farming [6]. Agriculture in mountain areas is characterized mainly by family and small-scale agriculture [8, 9]. This type of farming plays an important role in supporting sustainability and promoting food security and economic development [10].

Their importance from an ecological and socio-economic point of view does not exempt mountain areas from facing challenges. The hard-living conditions and the economic dynamics can induce farming exit, contributing to the ageing of the farm population and agricultural abandonment [11, 12, 13, 14]. Moreover, due to the isolation of mountain areas, the topography, the climate and short growing seasons, mountain farming faces higher production costs compared to lowlands [6, 15].

Since the 1970s, the European Commission has designed policies to address the challenges faced by mountain communities – as well as other communities located in the “areas facing natural or other specific constraints” [16, 17]. In the last three decades, the approaches adopted by some of such policies have favoured the valorisation of local resources to stimulate “conservation through consumption” [18, 19]. In this context and as a result of the efforts headed by the Euromontana association, the European Commission published rules to regulate the use of the term “mountain product” (Regulation EU n. 1151/2012 and Delegated Act EU n. 665/2014). Accordingly, the term – and the label created by each Member State – can only be applied to food products intended for human consumption whose raw materials and animal feedstuffs come essentially from mountain areas. Besides, the processing plants must be located within these areas.

Although representing a relevant step towards the institutionalisation of a market for mountain food products in Europe, the European legislation does not contemplate the application of the term “mountain product” to wines produced in mountain areas. The inclusion of wine among the products suitable to use the term “mountain product” could benefit several mountain regions – in Italy, Romania, Portugal, Greece, Slovenia, Cyprus, Spain and France – in which wines and grapes are relevant agricultural products [6]. For example, in 2018, in South Tyrol, a mountain area located in the Italian Alps, the



(a)



(b)

Figure 1. Wine labels from Italy appealing to the mountainous origin. Source: (a) [22], (b) [23].

wine sector employed about 10,000 people, and around 5,000 farms were involved in viticulture operations cultivating on average one hectare each [20, 21].

Besides benefiting producers in mountain areas, the possibility of applying the term “mountain product” to wines would be in line with a practice already adopted by winemakers across Europe: using the mountain origin as an appeal for consumers. Figure 1 displays some examples of this practice.

Some studies point out that consumers have a positive image of food produced in mountain areas. For them, mountain food products evoke purity, health, authenticity and simplicity [24, 25]. From the market side, the Global Consumer Trends report [26] stated that there has been an increasing interest of some consumers in wines that are sustainably produced. In Italy, the market for this type of wines increased by 34% from 2015 to 2016 [27]. Furthermore, a review of 34 studies on consumers’ perceptions, preferences and willingness-to-pay for wine with sustainability characteristics confirmed these trends and showed that implementing sustainability-oriented marketing actions may be a promising strategy for quality differentiation of wines [28].

Product differentiation through quality certification schemes may also contribute to preventing free-rider problems and information asymmetry in the market [29]. Considering that consumers cannot easily identify mountain products in the market [9, 24], the application of the mountain labelling scheme to wines may facilitate the identification of the “authentic” mountain wine. In addition, it can contribute to avoiding the misuse of mountain imagery and wording by producers that are not producing in mountain areas [6]. Previous studies have already shown how mountain cheese producers, within the same consortium, use the European label “mountain product” to avoid free-riding on product quality by producers from the lowlands [30]. Due to the exclusion of wines from the mountain labelling scheme, this possibility is not given for wine producers from mountain areas.

Despite these pieces of evidence in favour of including wines in the mountain labelling scheme, little is known from the consumer side. The literature on consumers opinion, preferences and willingness to pay for wines and sustainable wines is extensive (e.g., 31, 32, 28, 33, 34, 35, 36, 37, 38, 39). Concerning wines produced in mountain areas, little is known. The majority of the studies focused on the production side - for instance, Michael et al. [40], Zottelle et al. [41], Verdenal et al. [42], Stanchi et al. [43], Caffarra and Eccel (2013), Guimarães and Magalhães [45]. A study with German consumers and producers indicated potential in obtaining

a price premium for wine produced in steep slope [46]. Being part of a broader research project, the current study builds upon the findings of a previous exploratory study [47]. The latter employed a qualitative design and confirmed the interest of Italian consumers in wines produced in mountain areas. Furthermore, the authors identified eight main attributes by which Italian consumers associated wines and viticulture in mountain areas (see Table 1). Remarkably, only a few are directly connected to the mountain environment. However, the mentioned study does not analyse the importance of each attribute for consumers letting open the question on how mountain attributes scores in relation to all attributes tested.

A better understanding of consumers preferences and opinions regarding wines produced in mountain areas is of utmost importance for the debate on the inclusion of wines in the mountain labelling scheme as well as to help farmers and managers in the design of marketing strategies. Against this background, the objectives of this study are twofold: (1) to assess the preferences of Italian wine consumers concerning the attributes associated with wine from and viticulture in mountain areas thus comparing the mountain attributes among the other attributes afore mentioned; (2) to segment the market based on their preferences to identify customer groups for mountain wines. To do so, an online survey with Italian participants was undertaken using a (a) best-worst scaling method to rank preferences for the mountain wine attributes mentioned before, and a (b) latent class analysis to segment participants according to their preferences. Segments are further described using consumption behaviour and sociodemographic data.

2. RESEARCH DESIGN AND METHOD

2.1. Best-Worst Scaling Model

The best-worst scaling model (BWS) is a stated preference method and was designed by Louviere and Woodworth [48] based on the method of paired comparisons introduced by Thurstone [49, 50] and the McFadden’s studies on economic choice theory, use of psychometric data and conjoint experiments [51]. Also called maximum difference scaling [52], some authors classify best-worst scaling as a variant of discrete choice experiments [53].

The best-worst scaling model is designed to measure individual’s relative preferences in relation to a set of items. Individuals are asked to choose the best (or most important) and the worst (or least important) item among a set of items. The main idea is that the individ-

ual's decision is the result of a comparison of differential utilities in a set of items.

Like in the theory of random utility [54], in BWS an individual's utility is a latent dimension composed of an observable component (V) and an unobservable or random component (ϵ) (1) [55]:

$$U_{ij} = V_{ij} + \epsilon_{ij} \quad (1)$$

U_{ij} is the utility an individual i is assumed to obtain from alternative j in a specific set of items. V_{ij} is the observable component of utility, held by individual i for item j , while ϵ_{ij} is the random component utility. In BWS, each component V (2) and ϵ (3) is a result of the difference between the best and the worst items:

$$V_{bw} = V_b - V_w \quad (2)$$

$$\epsilon_{bw} = \epsilon_b - \epsilon_w \quad (3)$$

The observable components (V) in this study are the wine attributes shown to the participants in a task (choose the most and least important attribute in a set of items). The BWS model assumes that the probability of an individual selecting a pair of attributes (best and worst) is proportional to their distance on the latent dimension (in this case, the latent dimension is the utility) [55]. So, the utility (4) and the probability (5) equations can be written like the following:

$$D_{bw} = V_{bw} - \epsilon_{bw} \quad (4)$$

$$P(bw|C) = P(V_{bw} - \epsilon_{bw} > V_{ij} - \epsilon_{ij}) \quad (ij) \neq (bw) \quad (5)$$

In equation (4), D_{bw} is the distance between the best and the worst items, which cannot be observed directly. In equation (5), P is the probability, and C is the subset of items (task). As observed by Krucien [55], it is impossible to determine if the difference in the observable component is greater than the random component because the latter is not observable. Louvière et al. [56], suggest a multinomial logit model to explain the probability that an individual n chooses item j as best and j' as worst among a set of items (J):

$$P = \frac{\exp(\beta_n X'_{nj} - \beta_n X'_{nj'})}{\sum_{j, j' \in J, j \neq j'} \exp(\beta_n X'_{nj} - \beta_n X'_{nj'})} \quad (6)$$

In equation (6), the item selected as best is coded as 1. The item not selected by the individual is coded as 0. And the item marked as worst is coded as -1. X'_{nj} is the

observable explaining variable. The parameter β_n is the individual-specific preference of an individual n .

The results of the BWS model provide an importance score which represents the utility of each item for each individual – thus revealing the most important mountain wine attributes according to consumers preferences. It allows to further analyse preference heterogeneity using latent class analysis. This method helps to detect consumer segments according to their preferences [57].

2.2. Best-Worst Experiment and Questionnaire Design

The questionnaire was divided into four main parts: (part 1) individual food consumption behaviour; (part 2) eight attributes of mountain wine based on the aforementioned study [47] (see Table 1); (part 3) general attitudes towards labelling and mountain food; and (part 4) participants' socio-demographics. The survey was set up using Sawtooth Lighthouse Studio software.

The individual food consumption behaviour encompasses questions on consumption habits and individual motivations. 23 questions from an adapted version of the Food Choice Questionnaire developed by Pieniak and colleagues [58] were used. Answers could be given on 5-point Likert scales.

The BWS experiment followed a balanced incomplete block design [59]. It consisted of the sequential presentation of eight sets of four attributes. The attributes tested in this research were taken from a previous qualitative study [47] whose objective was to identify the main characteristics associated by Italian consumers to wines produced in mountain areas. Table 1 shows the attributes extracted from the mentioned study and used in the BWS experiment:

The eight attributes were transformed into sentences to make the experiment easier for the respondents. At each task, participants were asked to select the most and the least important attribute. Figure 1 below contains an example of a task.

To assure attribute frequency balance (i.e., each pair of attributes appears within the same set across the experiment) and attribute positional balance (i.e., the attributes appear approximately an equal number of times in each position), the attributes were randomized by the software algorithm [60].

The section on *general attitudes towards labelling and mountains* included questions on the definition of mountain areas and whether the participants read labels when buying food. Besides, participants were also asked to define to what extent they consider themselves to be mountain food consumers and how much they agree

Table 1. Attributes Italian consumers relate to wines and viticulture in mountain areas.

Wines produced with grapes from small farms¹
 Wines with delicate aromas and flavours²
 Vineyards located in high altitudes or terraces³
 Wine produced with less additive⁴
 Limited production volume⁵
 Less mechanization/more manual labour⁶
 Wines produced only with autochthonous grapes⁷
 Viticulture and wine production contribute to preserve the mountain environment⁸

Source: Author et al. [47].

For ease of reading, we use shorter formats of these attributes throughout the text as follows: ¹small farms, ²delicate aromas and flavours, ³high altitudes or terraces, ⁴less additive, ⁵limited production, ⁶manual labour intensive, ⁷autochthonous grapes, ⁸sustainable viticulture.

with the inclusion of wines in the mountain labelling scheme.

The *demographics* section encompassed questions regarding income, age, gender, household size, education, and city of residence – including whether respondents live in a mountain or non-mountain area, in an urban or rural area.

The questionnaire was designed in English and it was translated into Italian using back-translation [61]. The questionnaire was pre-tested with 81 participants from the Autonomous Province of Bolzano, Italy. Considering that no participant reported problems in understanding and completing the questionnaire, no changes to the questionnaire were made after the pre-test.

2.3. Data Collection and Pre-Treatment

Data were collected through a self-administered online survey from an Italian consumer panel. The questionnaire was designed using Sawtooth Lighthouse Studio (version 9.8.1) and sent to the respondents across Italy by the consumer panel provider. The data collection took place between January and May 2020.

For a research topic that is still in its infancy an exploratory design is suggested. Therefore, we opted for a quota sample which was representative of the Italian population in consideration of age and gender. The author(s) established the quota, whereas the sample was delivered by a professional panel company. It is important to highlight that the sample includes only wine consumers. To improve data validity, speeders as well as those who did not fulfil the requirements such as participants under 18 years of age and/or people that do not consume wine were filtered out [62].

To define the final sample, the respondents who completed the questionnaire underwent a second control based on the Root Likelihood (RLH). The RLH is a probability expression of the goodness of fit of the data (in this case, the utility scores) in predicting which items respondents choose [60]. The highest value for the RHL is 1. The lowest is obtained by dividing the total number of items per task by the maximum value (1). In this study, the minimum RHL value is 0.25. We obtained it by dividing the maximum RHL possible (1) by the number of items per task (4) [60]. We then excluded 111 respondents whose RHL was below the minimum value. The final sample size is 973 respondents.

Please choose what you consider **THE LEAST IMPORTANT AND THE MOST IMPORTANT** characteristic of wine from and viticulture in mountain area.

One or more characteristics repeat in the following pages. If you want, **you can repeat your choice**.

(1 of 8)

LEAST Important (check only one)		MOST Important (check only one)
<input type="radio"/>	The total volume of wine production should be limited in mountain areas.	<input type="radio"/>
<input type="radio"/>	Mountain vineyards should be located in terraces or at high altitudes.	<input type="radio"/>
<input type="radio"/>	Mountain viticulture should rather use manual labor.	<input type="radio"/>
<input type="radio"/>	The grapes for mountain wines should be grown on small farms.	<input type="radio"/>

Figure 2. Example of Best-Worst Scaling Task used in the study. Source: own elaboration.

2.4. Best-Worst Scaling Analysis

The best-worst scaling model generates discrete data that can be analysed through different methods [63]. Hierarchical Bayesian Multinomial Logit (HB MNL) was used for analysing data in this study because it provides a more accurate estimate compared to the standard Count Analysis and MNL. According to Orme [63], HB MNL offers a better solution, as it can generate estimates combining information at the individual level and data from other respondents in the sample.

The analyses generate a utility score which can be reported in three different ways: (a) raw utility scores that are the average utility value of each attribute; (b) probability scales, also known as rescaled importance scores (0 to 100 scaling), are ratio-scaling, meaning that a score of 10 is twice important as a score of 5; and (c) zero-anchored interval scales that represent the normalized raw utility score in which the scores have a mean of zero and a range of 100 [60]. To facilitate data interpretation, we report the results using the probability scale.

2.5. Latent Class Analysis and Characterization of the Classes

The latent class analysis is performed using Sawtooth Lighthouse Studio software (version 9.8.1). The latent class analysis identifies clusters (or segments) with differing preferences and estimates part worths (utilities) for each segment [64]. Each class is composed by respondents with similar preferences regarding the attributes of the best-worst scaling model. In other words, instead of calculating the utilities for each participant, latent class looks for respondents with similar preferences and then calculates the average utilities within the clusters [64]. We use the probability scale/rescaled score (0 to 100) for the formation of the clusters. In this regard, it is important to highlight that there is no respondent who fully belongs to a single cluster. Each respondent is assigned a probability of belonging to different groups according to their preferences.

To characterize the segments and test for differences among them, one-way Analysis of Variance (ANOVA) with post-hoc tests (Tukey and Tamhane) and cross tabulation with chi-square and standardized residuals were carried out. The analyses were performed using IBM SPSS Statistics 25.

3. RESULTS

3.1. Descriptive Demographic Statistics

Table 2 shows the description of the sample concerning the socio-demographic characteristics.

The sample is representative concerning the Italian population in terms of gender and age, and includes only wine consumers. The higher level of education of the sample can be explained by the skewed characteristics of the panel participants – because internet users do not necessarily represent the population [67]. Moreover, in Italy, internet access is greater among people with higher education [68].

The household size at the sample level is slightly smaller compared to the Italian population. Compara-

Table 2. Sample description.

	Sample n = 973 (%)	Italian Population (%)
Gender		
Male	50.70	48.43
Female	49.30	51.57
Age		
18-29	15.00	14.61
30-44	22.60	23.22
45-59	27.70	27.78
60+	34.60	34.37
Education		
Primary School	6.00	19.51
Middle School	10.80	30.03
High School	56.00	30.71 ^c
University Degree or Higher	32.60	10.78
Residence Location		
Rural Area ^a	28.0	24.00
Urban Area ^b	72.00	76.00
Mountain	10.00	23.54 ^d
Non-Mountain	90.00	76.46
Household Members		
1	10.30	12.97
2	33.40	22.55
3	26.10	24.82
4 or more	30.20	39.67

^a Municipalities with low degree of urbanization according to Eurostat [65] (Istat, 2019).

^b Municipalities with medium or high degree of urbanization according to Eurostat [65].

^c Includes non-university tertiary diplomas of the old system and A.F.A.M.

^d Based on the data from 2015 [66].

Source: own elaboration based on Istat [65] and Fondazione Montagna Italia [66].

Table 3. Ranking of attributes at sample level.

Item (Attribute)	Rank	Importance Score (0 to 100 scaling)
Less additive	1	24.45
Sustainable viticulture	2	21.69
Autochthonous grape	3	20.96
Delicate flavours and aromas	4	8.17
Small farms	5	7.30
Manual labour intensive	6	6.70
High altitudes and terraces	7	5.62
Limited production	8	5.11

Source: own elaboration.

tively, while at the sample level there is a greater number of respondents living with one person more, at the population level households with four or more people are more numerous.

Table 2 shows that only one-ninth of the interviewees live in a mountain area in contrast with almost a quarter at the population level.

3.2. General Ranking of Attributes

The aggregate average importance scores are displayed in Table 3 (Importance Score, 0 to 100 scaling):

The results indicate a prevalence of three attributes that are associated with health (“less additive”), sustainability (“sustainable viticulture”) and typicity/terroir (“autochthonous grape”). Together they add up to more than 60% of the total importance score. Some characteristics related to mountain viticulture and mountain areas such as the mountain landscape (“high altitudes and terraces”), the intensive need of manual labor, limited production and production in small farms are less relevant at the sample level.

3.3. Results of the Latent Class Analysis

In the latent class analysis, a three-class solution was chosen by observing the most used information criteria (Percent Certainty, AIC, BIC, Log-likelihood and relative Chi-Square) (Table 4). The most important attributes for each segment coincide with the three most important attributes at the sample level. Segments 1 and 2 have at least one attribute with a very high score whereas segment 3 displays preferences more evenly distributed among all attributes

3.4. Description of Clusters

By looking at the importance scores (Table 4) and the segment describing variables (Tables 5 and 6), in the next section the three segments are described. For ease of readiness, only statistically significant findings from the food choice questionnaire are displayed.

Segment 1 (Naturalists): this group constitutes the most numerous segment containing approximately 37% of the respondents. It is also the group with the highest percentage of older people – closely followed by segment 2. Its members place a high value on healthy eating and natural foods [69], that is, foods without additives and artificial ingredients, and with natural ingredients (Table 5). This importance given to natural foods seems to be extended to wines as well. Respondents falling into this segment show a high preference for mountain wines with fewer additives. Although to a lesser extent, their members are also concerned with sustainability of viticulture that is in second place in their preferences. This group gives the greatest relative importance (among all groups) to the item delicate flavours and aromas. This difference is particularly marked in relation to group 2.

Table 4. Characterization of the segments based on the clustering variables - 0 to 100 rescaled importance score.

Variables	Segment 1 n = 359 (36.9%)	Segment 2 n = 329 (33.8%)	Segment 3 n = 285 (29.3%)	Total n = 973
Less additive	31.91	24.92	12.72	24.45
Sustainable viticulture	20.91	26.10	14.52	21.69
Autochthonous grape	19.20	23.53	17.03	20.96
Delicate flavours and aromas	13.18	2.05	12.53	8.17
High altitudes and terraces	4.05	4.23	10.17	5.62
Small farms	3.91	7.62	12.79	7.30
Manual labour intensive	3.71	6.16	11.00	6.70
Limited production	3.08	5.36	9.21	5.11

Fit criteria of the 3-class solution: Log-likelihood = -17334.5, Percent Certainty = 19.7, AIC = 34715.0, BIC = 34891.1 Chi-Square= 8494.6. Source: own calculations.

Table 5. Food consumption behaviour, attitudes towards labelling, mountain area definition, and mountain food - mean responses by segment and total sample.

Variables	Segment 1 n=359 (36.9%)	Segment 2 n=329 (33.8%)	Segment 3 n=285 (29.3%)	Total n=973
Food consumption behaviour				
<i>It's important to me that the food I eat on a normal weekday:</i> ¹				
Is good valuer for money* ⁴	4.23 ^c	4.19	4.07 ^a	4.17
Is easy to plan, buy and prepare* ⁴	4.04 ^b	3.88 ^{a, c}	4.01 ^a	3.98
Contains natural ingredients*** ⁴	4.29 ^c	4.27 ^c	4.11 ^{a, b}	4.23
Contains no artificial ingredients** ³	4.21 ^c	4.18 ^c	4.01 ^{a, c}	4.14
Contains no additives*** ⁴	4.27 ^c	4.18	4.04 ^a	4.18
Keeps me healthy* ⁴	4.38 ^b	4.26 ^a	4.27	4.31
Tastes well* ⁴	4.57 ^c	4.51	4.45 ^a	4.52
Is familiar*** ³	3.66 ^{b, c}	3.51 ^{a, c}	3.90 ^{a, b}	3.68
Is what I usually eat*** ³	3.32 ^c	3.20 ^c	3.64 ^{a, b}	3.37
Attitudes towards labelling, mountain area definition, and mountain food (segment means)				
In favour of the inclusion of mountain labels for wine*** ^{2, 4}	4.21 ^c	4.19 ^c	3.96 ^{a, b}	4.13
Consumption of mountain food products*** ^{1, 3, 5}	3.10 ^{b, c}	3.25 ^a	3.36 ^a	3.23
Agreement with the current mountain definition* ^{1, 3}	3.65 ^c	3.66	3.81 ^a	3.70

¹ = 5-point Likert scale from (1) strongly disagree to (5) strongly agree.

² Item: In your opinion, should the European Commission include wine in the list of agri-food products authorized to use the term “mountain product” and the “mountain label”, if they have been produced in a mountain area? = 5-point Likert-type scale from (5) definitely yes to (1) absolutely not.

³ = Tukey post-hoc test was used because of no differences in variances in segments.

⁴ = Tamhane post-hoc test was used because of differences in variances in segments.

⁵ Item: Considering a scale from 1 (not at all) to 5 (very much), to what extent do you consider yourself a consumer of mountain food products?

^{a, b, c} = Letters indicate significant differences ($p < 0.05$) between segments according to post-hoc tests. For instance, ^a indicates that this segment differs from segment 1 in this variable with $p < 0.05$.

***= $p < 0.001$, **= $p < 0.01$, *= $p < 0.05$ k= $p < 0.1$

χ^2 = chi-square. n.s. = non-significant

Note: the F values are in the appendix.

Source: own calculations.

Although the segment 1 members do not see themselves as consumers of mountain food products, they are the ones most leaned to support the inclusion of wines in the mountain labelling scheme.

Segment 2 (Sustainability-driven): members of this segment represent about one-third of the sample. It is the group with the highest proportion of female respondents. Like segment 1, this group also has a high proportion of elderly people and value food naturalness. Nevertheless, they seem to give less importance to the relation between food and health than segment 1 members. Regarding the preferences of group 2, viticulture that plays an active role in the preservation of the mountain environment is of importance for its members as they placed sustainable viticulture first. The other attributes valued by members of this segment are wines produced with ‘less additive’ and the use of ‘autochthonous

grapes’ by mountain winemakers. Sensory characteristics and the mountain setting seem to be relatively less important recalling the traditional aspects of mountain agriculture (e.g., higher altitudes, terraces, limited production). However, they tend to support the protection of wines by the regulation on mountain food products.

Segment 3 (Terroir-driven): the smallest of the segments, with 29.3% of the sample, is also the group with the highest percentage of younger respondents (18-44 years old) and highest proportion of males. Natural food tends to be valued by the members of this segment, but to a lower degree if compared to the other two segments. In their daily meals, they tend to repeat their food choices (“is what I usually eat”) and eat food that is familiar to them. About the consumption of mountain products and the current definition of mountain areas, respondents from this group scored higher than the oth-

Table 6. Socio-demographics profile of the respondents by segment and total.

Variables	Segment 1 n=359 (36.9%)	Segment 2 n=329 (33.8%)	Segment 3 n=285 (29.3%)	Total n=973
Socio-demographic variables				
Gender**(%)				
Female	50.8	56.9	43.4	50.7
Male	49.2	43.1	56.6	49.3
$\chi^2 = 10.964$. $p < 0.05$				
Residence Location (n.s.) (%)				
Rural Area	27.9	28.0	27.0	28.00
Urban Area	72.1	72.0	73.0	72.00
Mountain Area	9.1	11.4	9.3	10.00
Non-Mountain Area	90.9	88.6	90.7	90.00
Age classes (n.s.) (%)				
18-29	13.2	14.1	18.5	15.0
30-44	20.3	22.0	26.3	22.6
45-59	29.0	28.7	24.9	27.7
60 & over	37.5	35.2	30.2	34.6
Income (net per year) (n.s.) (%)				
≤ 24.000€	35.1	30.9	31.3	32.6
24.000€ - 60.000€	46.8	50.8	49.8	49.0
≥ 60.000€	5.2	3.7	5.3	4.7
Preferred not to answer	12.9	14.7	13.5	13.7

**= $p < 0.01$. χ^2 = chi-square. n.s. = non-significant.

Source: own calculations.

er groups, especially in relation to segment 1. However, the members of segment 3 are the least leaned to accept the inclusion of wines in the mountain labelling scheme.

The most preferred item concerning mountain wines and viticulture in mountain areas is the use of autochthonous grapes. It is followed by sustainable viticulture, production of grapes on small farms and wines produced with less additive. Like in group 1, the attribute “delicate flavours and aromas” is also positioned with some relevance for the members of segment 3. Except for “small farms”, the characteristics related to the mountain viticulture (higher altitudes, terraces, limited production) are slightly less relevant for the members of segment 3. Nevertheless, they value these characteristics more than the other two groups.

The difference between the most important and least important attributes is relatively small, especially when compared to the other two segments. In other words, there is not a single and very strong preference, but rather a subset of attributes with a certain degree of importance for the members of group 3. In this vein, taking the first five attributes, it is possible to link the preferences of segment 3 with the concept of “terroir” [70, 71, 72, 73].

4. DISCUSSION

Do the mountains matter to consumers? When it comes to wine and viticulture, the results indicate that Italians attach less importance to characteristics related to mountain farming. Aspects such as landscape (“high altitude and terraces”), small-scale agriculture (“small farms”, “limited production”) and intensive manual labour received less attention in the survey. On the other hand, participants showed a higher preference for naturalness, sustainability, and tradition/typicity. These results confirm previous study findings [28, 69, 74].

Looking at the segment level, some more heterogeneity can be observed. Segments 1 and 2 (“naturalists” and “sustainability-driven”) showed a greater preference for more naturally-produced wines and sustainable viticulture. In the case of the “naturalists”, the high importance of health and natural food (Table 5, food consumption behaviour variables) may be linked to their preferences for more attributes associated with “natural wines”. A similar relationship was found in the study of Galati et al. [75], whose results indicated that a higher willingness to pay for natural wines depended on consumer attitudes towards healthy products with-

out additives or additional ingredients. As for segment 2, a higher interest in sustainable wines may be (at least partially) explained by the higher proportion of female respondents, confirming the findings in the review study of Schäufele and Hamm [28].

Concerning the segment “terroir-driven”, the balanced distribution of preferences points to a probable valorisation of a subset of attributes – even though they tend to have tradition/typicity (“autochthonous grapes”) as the main consumption driver. The use of indigenous grapes, the sustainable viticulture, the small-scale production (“small farms”), the organoleptic qualities (“delicate flavours and aromas”), and the purity (“less additive”) are parts of the same whole that is attached to a territory and drives their consumption. Similar conclusions arose in a cross-country study on European consumers perception concerning traditional food products [76] – which can also be called “terroir products”, “typical food”, “regional food”, “local food” [77]. In this study, Italian consumers associated traditional/typical food products with many quality dimensions to a rather similar extent. In other words, Italians perceive traditional food products as a very comprehensive definition, without strongly emphasizing one specific element. The preference for attributes associated with the notion of “terroir” may also be explained by the higher importance attached to familiarity, which is a common trait in consumers who are more likely to opt for traditional food products [58].

Going back to the initial question (“Do mountains matter?”), the results reveal that the importance of the mountain setting is not homogeneous among the segments. “Naturalists” and “sustainability-driven” showed low interest in the attributes related to mountain viticulture (“small farms”, “limited production”, “high altitude and terraces”, manual labour intensive”). For the “terroir-driven”, except for “small farms”, the attributes related to mountain viticulture and mountain areas are also among the least preferred. Nevertheless, the importance scores of such attributes are higher for segment 3 when compared with the results of the other two groups. In short, mountains are of some importance only for the “terroir-driven”.

Concerning the mountain food label, there are at least four reasons to believe that a considerable number of wine consumers would be attracted by certified wines produced in mountain areas. Firstly, most participants of this study are in favour of the inclusion of wines in the mountain labelling scheme. Secondly, the most important attributes in the case of wines and viticulture in mountain areas may evoke characteristics consumers associate with mountain food products, such as simplicity, purity,

healthiness and authenticity [24, 25]. In this way, from one hand, wines produced with “less additive” and “sustainable viticulture” may relate to simplicity, purity and health. On the other hand, autochthonous grapes may represent authenticity. And finally, the markets for sustainable wines and qualified food products are increasing [28, 78]. Given the reputation of mountain wines and viticulture, certifying their quality and origin with the mountain labelling scheme could provide mountain winemakers with an excellent opportunity in these growing markets. From these perspectives, it is plausible to think that the application of the mountain food label to wines may increase consumer purchase interest.

Based on our findings, both marketing and production strategies should be tailored according to three types of wine consumers: the naturalists, the consumers of sustainable wines, and the “terroir” wine consumers (consumers of traditional and typical products). For the first group, mountain winemakers should focus on the production and marketing of wines with less additive (e.g., less or no added sulphites) as well as other types of winemaking process based on the principles of natural winemaking [75].

For the “sustainability-driven”, the graphical and textual information should highlight mountain viticulture practices that contributes to the restoration and/or conservation of the mountain environment. For instance, the use of local grape varieties and its effects in terms of agrobiodiversity enrichment, the reduction of pesticide and fungicide usage and the positive effects for the water resources. Using other certification schemes, such as organic and biodynamic may also contribute to market mountain wines for this segment.

For the “terroir-driven” segment, mountain wines must be accompanied by graphic and textual information showing the direct connection between the product and the mountain territory. In this respect, it would be advisable to highlight the sensory characteristics and uniqueness of production that derive from the peculiar environment conditions, the use of local grape varieties and small-scale production.

5. CONCLUSIONS

Prior work on wine has focused on sustainability aspects of wine but neglecting consumers preferences for wine produced in mountain areas. In this work, the authors have conducted a quantitative study using the best-worst scaling model and latent class analysis. Further, they have derived a ranking of eight attributes which the relative importance of attributes associated

to ecological sustainability (“sustainable viticulture”), natural wine processing (“less additive”) and typicality/terroir (“autochthonous grape”). Their findings also provide a basis for marketing strategies that emphasize the origins of products and can help policy makers to develop national wine policies.

Results of this study contribute to enrich the knowledge of the research community on consumer preferences for wines produced in mountain areas. In addition, findings can be useful for policy-makers who may want designing sustainable development strategies in mountain areas in line with consumer expectations on mountain farming and viticulture.

All in all, a mountain certification scheme appears to be useful to capture the positive reputation of mountains. If it is not feasible to extend the mountain labelling-scheme to wines, mountain wine producers should market their wines in combination with those food products that are allowed to use the EU label “mountain product” in their packaging.

The challenge to wine producers from mountain areas is threefold:

- Lobbying actions to include wines in the mountain labelling scheme;
- Catching consumers’ attention without generating information overload; and
- Improving viticulture and wine production by adopting more sustainable practices.

As an avenue for further research, it would be interesting to employ a quantitative approach to measure revealed preferences regarding wines produced in mountain areas. For instance, calculating the WTP for wines produced in mountain areas by using hypothetical or non-hypothetical designs such as experimental auction.

This study has some limitations. Although the eight attributes of the BWS experiment were retrieved from a previous qualitative study, some more attributes could have been tested such as taste, price, alcohol level, use of wild yeasts, organic viticulture, territorial brands etc. Moreover, during the development of this study, the Italian government approved a new labelling scheme for wines produced in harsh environments (small islands, mountains and steep slopes). Testing the attributes established by this new regulation would be useful to the development of a European mountain labelling scheme for wines. Given that the participants of this research are exclusively from Italy, it is advisable to be cautious in generalising some of the results to other contexts. For the same reason, we suggest carrying out a similar study in other European countries to analyse consumer interest in mountain wines and their opinion concerning the inclusion of this product in the quality scheme for mountain food products”.

6. REFERENCES

- [1] Liniger, H., & Weingartner, R. (1998). Mountains and fresh water supply. *Unasylva: Moving Mountain*, 195, v. 49. Retrieved from <http://www.fao.org/3/w9300e/w9300e08.htm#mountains%20and%20freshwater%20supply>
- [2] Viviroli D., Weingartner, R. (2004). The hydrological significance of mountains: from regional to global scale. *Hydrology and Earth System Sciences*, 8(6), pp. 1016–1029. Retrieved from <https://www.hydrol-earth-syst-sci.net/8/1017/2004/hess-8-1017-2004.pdf>.
- [3] Körner, C. (2004). Mountain biodiversity, its causes and function. *Ambio*, 33(13), 11-17.
- [4] Zisenis, M., & Price, M.F. (2011). Europe’s Mountain Biodiversity: Status and Threats. In Austrian MAB Committee (Ed.), *Biosphere Reserves in the Mountains of the World: excellence in the clouds?* UNESCO, Vienna, 123 pages.
- [5] FAO - Food and Agriculture Organization of the United Nations. (2015). *Mapping the vulnerability of mountain peoples to food insecurity*. Retrieved from <http://www.fao.org/3/a-i5175e.pdf>
- [6] Santini, F., Fatmir, G., Gomez y Paloma, S. (2013) *Labelling of agricultural products and food products of mountain farming*. European Commission, Joint Research Centre, Institute for Prospective Technological Studies, Seville, 156 pages.
- [7] Losavio, C., & Perniciario, G. (2017). *Analisi della normativa inerente ai territori montani*. Consiglio Nazionale delle Ricerche, Roma, 89p.
- [8] Davidova, S., & Thomson, K. (2014). *Family Farming in Europe: challenges and prospect*. Report. European Parliament, Brussels.
- [9] FAO. Food and Agriculture Organization of the United Nations. (2013). *Mountain Farming is Family Farming*. A contribution from mountain areas to the International Year of Family Farming 2014. Retrieved from <http://www.fao.org/docrep/019/i3480e/i3480e.pdf>.
- [10] Graeub, B.E., & Chappell, M.J., Wittman, H., Ledermann, S., Kerrf, R.B., Gemmill-Herrena, G. (2016). The State of Family Farms in the World. *World Development*, v. 87, November 2016, pp. 1-15. DOI: 10.1016/j.worlddev.2015.05.012
- [11] MacDonald, D, Crabtree, J.R., Wiesinger, G., Dax, T., Samou, N, Fleury, P., Lazpita, J.G., Gibon, A. (2000). Agricultural abandonment in mountain areas of Europe: Environmental consequences and policy response. *Journal of Environmental Management*, 59, pp. 47–69. DOI: 10.1006/jema.1999.0335.

- [12] Orshoven, J., Terres, J.M., Tóth, T., Jones, R., Le Bas, C. (2014). *Updated common biophysical criteria to define natural constraints for agriculture in Europe: Definition and scientific justification for the common biophysical criteria: technical factsheets*. 2012. Joint Research Center, Ispra, 76 pages.
- [13] NORDREGIO. (2004). *Mountain Areas in Europe: Analysis of mountain areas in EU member states, acceding and other European countries*. Commissioned report by the European Commission –DG Regional Policy. Brussels. Retrieved from http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/montagne/mount1.pdf
- [14] Hinojosa L., Napoléone C., & Lambin E.F. 2016. The “mountain effect” in the abandonment of grasslands: Insights from the French Southern Alps. *Agriculture, Ecosystems and Environment*, 221 (2016), pp. 115–124.
- [15] Reuillon, J. L., C. Perrot, (2012). *La filière française de laits et de fromages de montagne (Mountain milk and cheese in France: a case study for mountain products supply chains)*. Institut de l’Élevage, INRA Sidam, Cniel, 73 pages.
- [16] Bryden, J., & Mantino, F. (2018). Rural Policy in Europe. In W. H. Meyers & T. Johnson, *Handbook of International Food and Agricultural Policies*, pp. 89-119. Missouri: World Scientific.
- [17] Mantino, F. (2008). Sviluppo rurale in Europa : *Politiche, istituzioni e attori locali dagli anni’70 ad oggi* (Economia e politica agraria). Milano, Edagricole, 300 pages.
- [18] Bergmann, H., Enneking, U., Grotelueschen, und Requardt (2006): Protecting biodiversity in the Harz Region by introducing new marketing policies. *21st General Meeting of the European Grassland Federation*, Badajoz, Spain, 3-6 April, 2006.
- [19] Grotelueschen, M. und Requardt, N. (2006): Tourismus, Naturschutz und Vermarktung regionaler Produkte eine ”Discrete-Choice“ Analyse anhand des Harzer Rotviehs. *Landwirtschaft und Umwelt*, 13, 51-67
- [20] IDM. 2018. *Breve guida dei vini dell’Alto Adige*. Booklet. Retrieved from <https://www.vinialtoadige.com/it/stampa-downloads/pubblicazioni/63-0.html>
- [21] Provincia Autonoma di Bolzano. (2018). *Relazione agraria e forestale 2018*. Retrieved from <http://www.provinz.bz.it/agricoltura/flip/raf2018/>.
- [22] Cembra (n.d.). San Sent Vigna – Cembra Cantina di Montagna. Retrieved from <https://www.cembracantinadimontagna.it/>.
- [23] Marinushof (n.d.). Sudtirolo Vinschgau Denominazione di Prognose Protetan. Pinort Noirt 2015. Wein aus Steillage. 650m. Vino di Montagna. Retrieved from <https://www.marinushof.it/it/pdf/PinotNoir.pdf>.
- [24] Schjøll, A., Amilien, V., Arne, P., Revoredo, C., & Leat, P. (2010). Promotion of mountain food: An explorative a study about consumers’ and retailers’ perception in six European countries. *Methodology*, July,1558–1567.
- [25] Giraud, G., & Petit, M. (2003). *Agriculture et produits alimentaires de montagne*. Paris, France: INRA.
- [26] Wine Intelligence. (2018) *Global Consumer Trends*. Wine Intelligence, London, 61 pages.
- [27] Nomisma Wine Monitor. (2018). *Wine marketing: Scenari, mercati internazionali e competitività del vino italiano : Con oltre 1000 importatori e distributori europei e americano* (Edizione 2018. ed., Idee & strumenti per il marketing). Roma: Agra.
- [28] Schäufele, I., & Hamm, U. (2017). Consumers’ perceptions, preferences and willingness-to-pay for wine with sustainability characteristics: A review, *Journal of Cleaner Production*, V. 147, 2017, p. 379-394. DOI: 10.1016/j.jclepro.2017.01.118.
- [29] Akerlof, G. (1970). The Market for “Lemons”: Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics*, 84(3), 488-500.
- [30] Sidali K., & Scaramuzzi S. (2014), Resilience to strategies to loose strictness of specification sheets in GI consortia. *Proceedings of the 11th European IFSA Symposium, Farming systems facing global challenges: Capacities and strategies*, Berlin, 1-3 April 2014.
- [31] Stanco, M., Lerro, M., & Marotta, G. (2020). Consumers’ Preferences for Wine Attributes: A Best-Worst Scaling Analysis. *Sustainability*, 12(7), 2819.
- [32] Corduas, M., Cinquanta, L., & Ievoli, C. (2013). The importance of wine attributes for purchase decisions: A study of Italian consumers’ perception. *Food Quality and Preference*, 28(2), 407-418.
- [33] Delmas, M. A., & Grant, L. E. (2014). Eco-Labeling Strategies and Price-Premium: The Wine Industry Puzzle. *Business & Society*, 53(1), 6–44. DOI: <https://doi.org/10.1177/0007650310362254>.
- [34] De-Magistris, T., Gracia, A., & Albisu, L.M. (2014). Wine consumers’ preferences in Spain: An analysis using the best-worst scaling approach. *Spanish Journal of Agricultural Research*, SJAR, 12(3), 529-541.
- [35] Vecchio, R. (2013). Determinants of willingness-to-pay for sustainable wine: Evidence from experimental auctions. *Wine Economics and Policy*, 2(2), 85-92.

- [36] Lockshin, L, & Corsi, A. M. (2012). Consumer behaviour for wine 2.0: A review since 2003 and future directions. *Wine Economics and Policy*, 1(1), 2-23. DOI: <https://doi.org/10.1016/j.wep.2012.11.003>
- [37] Casini, L., Corsi, A.M. & Goodman, S. (2009). Consumer preferences of wine in Italy applying best-worst scaling, *International Journal of Wine Business Research*, Vol. 21 No. 1, pp. 64-78. DOI: <https://doi.org/10.1108/17511060910948044>
- [38] Scarpa, R., Thiene, M., & Galletto, L. (2006). Consumers WTP for wine with certified origin: Latent classes based on attitudinal responses. *Journal of Food Products Marketing*, 15, pp.231-248.
- [39] Lockshin L., & Hall J. (2003), Consumer purchasing behaviour for wine : what we know and where we are going, in Lockshin, L. and Rungie, C. (eds.), *International Colloquium in Wine Marketing 2003*, Adelaide, University of South Australia.
- [40] Michael, C., Gil, E., Gallart, M., & Stavrinides, M. C. (2021). Evaluation of the Effects of Spray Technology and Volume Rate on the Control of Grape Berry Moth in Mountain Viticulture. *Agriculture*, 11(2), 178. doi:10.3390/agriculture11020178
- [41] Zottele, F., Scandella, F., Bucci, D., Nabacino, L., & Scomegna, M. (2018). Surveying the development of the steep-slope, terraced and mountainous viticultural landscape by using unmanned aerial vehicles: a costs & benefits análisis. In *Proceedings of the 6th International Congress on Mountain and Steep Slope Viticulture*. San Cristobal de la Laguna, Spain. Retrieved from http://www.cervim.org/netdownload_pup.aspx?amb=1-0-0-1133-0.
- [42] Verdenal, T., Zufferey, V., Spring; J.L., Dienes-Nagy, A., Belcher, S., Lorenzini, F., Koestel, C., Rösti, J., Gindro, K., & Viret, O. (2018). Earliness and intensity of defoliation under the mild climate of Switzerland: a complete study on five cultivars over seven years. In *Proceedings of the 6th International Congress on Mountain and Steep Slope Viticulture*. San Cristobal de la Laguna, Spain. Retrieved from http://www.cervim.org/netdownload_pup.aspx?amb=1-0-0-1133-0.
- [43] Stanchi, S., Godone, D., Belmonte, S., Freppaz, M., Galliani, C. & Zanini, E. (2013) Land suitability map for mountain viticulture: a case study in Aosta Valley (NW Italy). *Journal of Maps*, 9:3, 367-372, DOI: 10.1080/17445647.2013.785986
- [44] Caffarra, A., & Eccel, E. (2013). Projecting the impacts of climate change on the phenology of grapevine in a mountain area. *Australian Journal of Grape and Wine Research*, 17: 52-61. <https://doi.org/10.1111/j.1755-0238.2010.00118.x>
- [45] Guimarães, D., & Magalhães, A. (2010). Mountain viticulture in hot climate -the port wine experience. In *Proceedings of the 3rd International Congress on Mountain and Steep Slope Viticulture*. Castiglione di Sicilia, Italia. Retrieved from http://www.cervim.org/netdownload_pup.aspx?amb=1-0-0-655-0.
- [46] Strub, L., & Loose, S.M. (2017). Is there a future for steep slope wine growing? Combining producer and consumer perspectives towards economically sustainable concepts. *Proceedings of the 5th International Congress on Mountain and Steep Slope Viticulture*. Conegliano, Italy.
- [47] Linder, M.O., Sidali, K.L., & Busch, G. (2021). Mountain beef and wine: Italian consumers' definitions and opinions on the mountain labelling-scheme. *Economia Agro-alimentare/Food Economy - Open Access*, 23(1). <https://doi.org/10.3280/ecag1-2021oa11549>.
- [48] Louviere, J.J., & Woodworth G.G. (1990). *Best-Worst Scaling: A Model for Largest Difference Judgments*. Working paper, Faculty of Business, University of Alberta.
- [49] Thurstone, L. L. (1994). A law of comparative judgment. *Psychological Review*, 101(2), 266-270. DOI: <http://dx.doi.org.libproxy.unibz.it/10.1037/0033-295X.101.2.26>.
- [50] Finn, A. & Louviere, J.J. (1992). Determining the Appropriate Response to Evidence of Public Concern: The Case of Food Safety. *Journal of Public Policy & Marketing*, 11, 12-25. DOI: <https://doi.org/10.1177/074391569201100202>.
- [51] McFadden, D. (1986). The Choice Theory Approach to Market Research. *Marketing Science*, 5(4), 275-297. Retrieved from www.jstor.org/stable/184004.
- [52] Cohen, S.H. (2003). Maximum Difference Scaling: Improved Measures of Importance and Preference for Segmentation. Paper presented at the Sawtooth Software Conference Proceedings, Washington.
- [53] Mühlbacher, A.C., Kaczynski, A., Zweifel, P. et al. (2016). Experimental measurement of preferences in health and healthcare using best-worst scaling: an overview. *Health Econ Rev* 6, 2 (2016). DOI: 10.1186/s13561-015-0079-x
- [54] McFadden, D. (1974). Conditional Logit Analysis of Qualitative Choice Behavior. In P. Zarembka (ed.), *Frontiers in Econometrics*, 105-142, Academic Press: New York, 1973. Retrieved from <https://eml.berkeley.edu/reprints/mcfadden/zarembka.pdf>.
- [55] Krucien, N. (2015). *Analyse de la qualité del'offre de soins de médecine générale du point de vue des*

- patients. Santé publique et épidémiologie. Université Paris Sud – Paris XI, 2012. Retrieved from <https://tel.archives-ouvertes.fr/tel-00807172>.
- [56] Louviere, J., Flynn, T., & Marley, A. (2015). *Best-Worst Scaling: Theory, Methods and Applications*. Cambridge: Cambridge University Press. DOI: 10.1017/CBO9781107337855
- [57] Magidson, J., & Vermunt, J. K. (2002). Latent class models for clustering: a comparison with K-means. *Canadian Journal of Marketing Research*, 20(1), 36-43.
- [58] Auger, P., Devinney, T. M., & Louviere, J. J. (2007). Using Best: Worst Scaling Methodology to Investigate Consumer Ethical Beliefs across Countries. *Journal of Business Ethics*, 70(3), 299–326. <http://www.jstor.org/stable/25075293>
- [59] Pieniak, Z., W. Verbeke, F. Vanhonacker, L. Guerrero, M. Hersleth. (2009). Association between traditional food consumption and motives for food choice in six european countries. *Appetite*, 53, pp. 101-108. DOI: 10.1016/j.appet.2009.05.019.
- [60] Sawtooth Software. (2019). Lighthouse Studio v.9.8: software for web interviewing and conjoint analysis. Sawtooth Software, Provo.
- [61] Maneesriwongul, W., & Dixon, J. (2004). Instrument translation process: A methods review. *Journal of Advanced Nursing*, 48(2), 175-186.
- [62] Aust, F., Diedenhofen, B., & Ullrich, S. (2013) Seriousness checks are useful to improve data validity in online research. *Behavior Research*, 45, pp. 527–535. DOI: <https://doi.org/10.3758/s13428-012-0265-2>.
- [63] Orme, B. (2009). MaxDiff Analysis: Simple Counting, Individual-Level Logit, and HB. Sawtooth Software technical paper series. Retrieved from <https://www.sawtoothsoftware.com/support/technical-papers/maxdiff-best-worst-scaling/maxdiff-analysis-simple-counting-individual-level-logit-and-hb-2009>.
- [64] Sawtooth (2017). *Software for Latent Class Estimation for CBC Data*. Sawtooth, Povo, 68 pages.
- [65] Istat. (2019). *Annuario Statistico Italiano*. Istituto Nazionale di Statistica, Roma, 2019. Retrieved from <https://www.istat.it/it/archivio/236772>.
- [66] Fondazione Montagna Italia. *Rapporto Montagne Italia 2016*. Roma, 336 pages. Retrieved from <https://uncem.it/wp-content/uploads/2020/04/RAPPORTO-MONTAGNE-ITALIA-2016.pdf>.
- [67] Evans, J. R., & Mathur, A. (2005). The value of online surveys. *Internet Research*, 15(2), 195-219. DOI: 10.1108/10662240510590360.
- [68] Istat. (2018). *Internet@Italia: Domanda e offerta di servizi online e scenari di digitalizzazione*. Fondazione Ugo Bordoni, Roma, 140 pages. Retrieved from <https://www.istat.it/it/files/2018/06/Internet@Italia-2018.pdf>.
- [69] Román, S., Sánchez-Siles, L. M., & Siegrist, M. (2017). The importance of food naturalness for consumers: Results of a systematic review. *Trends in Food Science & Technology*, 67, 44-57. DOI: 10.1016/j.tifs.2017.06.010.
- [70] Mapes, G. (2020). Marketing elite authenticity: Tradition and terroir in artisanal food discourse. *Discourse Context & Media*, 34, DOI: 10.1016/j.dcm.2019.100328.
- [71] Jones, S. (2020). Terroir and the Family Farm. *Anthropology of food*, S14, 2020. DOI: <https://doi.org/10.4000/aof.10603>.
- [72] Van Leeuwen, C., & Seguin, G (2006) The concept of terroir in viticulture. *Journal of Wine Research*, 17:1, 1-10, DOI: 10.1080/09571260600633135.
- [73] Aurier, P., Fort, F., & Sirieix, L. (2005). urier, P., Fort, F., & Sirieix, L. (2005). Exploring terroir product meanings for the consumer. *Anthropology of Food*, 4. <https://doi.org/10.4000/aof.187>
- [74] Lee, H.J., & Yun, Z.S. (2015). Consumers' perceptions of organic food attributes and cognitive and affective attitudes as determinants of their purchase intentions toward organic food. *Food Quality and Preference*, 39, 259-267. DOI: 10.1016/j.foodqual.2014.06.002.
- [75] Galati, A., Schifani, G., Crescimanno, M., & Migliore, G. (2019). “Natural wine” consumers and interest in label information: An analysis of willingness to pay in a new Italian wine market segment. *Journal of Cleaner Production*, 227, 405-413.
- [76] Vanhonacker, F., Verbeke, W., Guerrero, L., Claret, A., Contel, M., Scalvedi, L., Żakowska-Biemans, S., Gutkowska, K., Sulmont-Rossé, C., Raude, J., Granli, B.S. and Hersleth, M. (2010). How European consumers define the concept of traditional food: evidence from a survey in six countries. *Agribusiness*, 26: 453-476. DOI: 10.1002/agr.20241.
- [77] Amilien, V. (2005). Préface : à propos de produits locaux. *Anthropology of Food*, 4. DOI: 10.4000/aof.306
- [78] EC - European Commission. (2020). *Economic value of EU quality schemes, geographical indications and traditional specialties guaranteed*. Report. Luxembourg: European Union, 144p.

APPENDIX

F Values – Variables from Table 5.

F = “is good value for money” =3.97, F = “Is easy to plan, buy and prepare” =4.57, F = F = “contain natural ingredients” =7.02, F = “contain no artificial ingredients” =5.35, F = “contain no additives” =7.00, F = “keep me healthy” =3.36, F = “tastes well”=3.20, F = “is familiar” =18.13, F = “is what I usually eat”=20.72, F =” In favour of the inclusion of mountain labels for wine”= 9.71, F = “Consumption of mountain food products” = 2.86, F = “Agreement with the current mountain definition” = 3.14

Source: own calculations.



Citation: Linda Bitsch, Barbara Richter, Jon H. Hanf (2022) The competitive landscape in transitioning countries: the example of the Armenian wine industry. *Wine Economics and Policy* 11(1): 31-45. doi: 10.36253/wep-10657

Copyright: ©2022 Linda Bitsch, Barbara Richter, Jon H. Hanf. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/wep>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

The competitive landscape in transitioning countries: the example of the Armenian wine industry

LINDA BITSCH*, BARBARA RICHTER, JON H. HANF

Department of Wine & Beverage Business, Hochschule Geisenheim University, Von-Lade-Straße 1, D-65366 Geisenheim, Germany. E-mail: linda.bitsch@hs-gm.de; barbara.richter@hs-gm.de; jon.hanf@hs-gm.de

*Corresponding author.

Abstract. Scholars showed that in transition and developing countries originating from the Soviet period, the degree of market competition is rather low, as large corporates that had been operating were still prevailing. One can assume that the markets had been highly attractive and many newcomers must have been interested in entering the market, due to fewer market participants, i.e. processors and retailers, but numerous farmers are engaged in the commodity production. This had provoked relatively high profitability for downstream firms acting on the local market and likely increased the market competition. However, evidence exists that market structures and hence competition is still hampered. Therefore, this study aims to show how competition in markets of transition countries has developed and provide a detailed description of the market structure to derive the degree of competition. As the subject of research, the Armenian wine industry has been exemplarily chosen as its wine industry is emerging and represents a key sector in the Armenian agri-food industry. Similar cases exist in other transitioning and developing countries. Empirical results from the qualitative research that allows a comprehensive overview of the whole sector reveal that the competition intensity is relatively low, and wine producers act in an oligopolistic market surrounding. Based on this, implications for producers and policy makers are derived, which include competitive and rural policy implications.

Keywords: competition intensity, industry structure, policy implications, rural development, Armenia, wine.

1 INTRODUCTION

At the beginning of the new millennium, researchers showed a heightened interest in competition in transition and developing countries [1]. Especially in transitional economies, the dramatic changes initiated after the collapse of communism have contributed to the growing interest in competition [1]. After leaving the previous centralized planned economies, a process of restructuring and development towards market economies took place [1,2]. In most cases, transition economies “developed weakly operating competi-

tive markets and regulatory frameworks” [1]. Scholars had shown that in different sectors of several transition and developing countries the degree of market competition¹ is rather low [1,4,5]. Especially in the agri-food industries of transition countries, large corporates that had been operating in the former Soviet Union were still prevailing. This was also true for the Armenian wine industry as part of the agri-food industry which serves as an example market for other transitioning countries [6]. Compared to the situation of perfect competition there had been fewer market participants, i.e. processors and retailers, but numerous farmers are engaged in the commodity production. This had provoked relatively high profitability for downstream firms acting on the local market. They had often received extraordinarily high margins but were not competitive in international competition. In conclusion, the markets had been highly attractive and many newcomers must have been interested in entering the market. However, the opposite was the case.

Friesenbichler et al. [2] showed that there had been a switch in research. While earlier research mainly focused on competition and productivity, later articles rather examined the effects of market competition on technology and innovation². Similarly, the wine research focused on wine clusters and their impact on innovation in developed and transitioning countries (e.g. 7–9). Dressler [10] analysed how innovation management can help to deal with market competition, conducting research with German wineries. Recently, only little research has been published regarding the analysis of structure and competition in markets of transition countries. However, evidence exists that market structures and hence competition is still hampered [2]. We argue that market structures and hampered competition are directly related to rural development. Knowledge of market structures and competition is necessary for a targeted development of rural policy implications.

In this context, the questions arise why market structures are not further analysed and how competition can be initiated. Therefore, this study aims to show how competition in markets of transition countries has devel-

oped and provides a detailed description of the market structure to derive the degree of competition. Based on the results, implications for competitive policies as well as for rural development will be given.

As a subject of research, the Armenian wine industry has been chosen as it is emerging and represents still a key sector of the agri-food industry in the transition economy of Armenia. The wine industry is becoming increasingly important for the Armenian economy and with its strong bonds with rural areas it is important for rural development. Similar cases exist in other transitioning and developing countries.

The Armenian government released a 2014-2025 development policy to develop several sectors that will contribute to economic growth and poverty reduction, prioritizing high-value-added processing industries, such as wine production (RA 2014-2025 Sustainable Development Strategic Program [11]). By coming increasingly important for the Armenian economy, the wine industry can be supported by rural policies that help to further develop the industry and to increase the competitiveness of the industry participants (or: of the sector as a whole). This would also create the opportunity for Armenian wine producers to export their wines, for instance, to European markets. For targeted rural policy implications, a profound knowledge of the sector and market structures is necessary. However, so far there is hardly any literature available regarding the domestic market.

With 35 companies, the Armenian wine industry is small in size; thus, a qualitative approach was chosen as a quantitative survey could not be carried out. In total, we conducted 41 individual in-depth interviews so that a comprehensive overview of the whole sector could be presented.

We interviewed almost 50% of all wine producers, including all large and leading companies. In addition, we have covered the majority of all experts from the Armenian wine industry. Accordingly, interviews were also conducted with suppliers, buyers, and other experts of institutions related to the wine industry. This comprehensive study - covering the sector almost completely - allows drawing implications for wine producers and policy makers. The Armenian wine industry can be seen as an example for countries such as Georgia and Azerbaijan, which have a similar historical development of their wine industries shaped by the Soviet history. Today, these countries and their wine industries face similar challenges [12–15].

The paper is structured as follows: Section ‘Framework of competition intensity in the Armenian wine industry’ outlines the development of the Armenian wine industry and sets out predictions for the analysis of

¹ The degree of competition is defined as follows: a high degree of competition refers to the situation of perfect competition (many firms, identical products). In imperfect markets, the degree of competition decreases from monopolistic competition (many firms, slightly different products) to oligopolistic market structures (few firms acting as suppliers) and monopolies (only one supplier). In fully competitive markets the firm is the *price taker*, whereas in a monopoly it is considered to be the *price maker*. In terms of welfare considerations, the effect of the different degrees of competition differ in their impact on total welfare: the higher the degree of competition, the higher is the total welfare. See [3].

² For a literature review on market competition in transition economies see [2].

competition intensity. Section ‘Empirical study’ details the approach of data collection and evaluation used in this study, and presents the results and key findings of the study. Section ‘Discussion and implications’ provides recommendations for wine producers as well as competitive and rural development policy implications. In the last section, ‘Summary’, summarizing comments are given.

2 FRAMEWORK OF COMPETITION INTENSITY IN THE ARMENIAN WINE INDUSTRY

2.1 *Development of the Armenian wine industry*

As many Caucasian countries, Armenia has a long-lasting history in winemaking which was heavily influenced by the country’s membership within the Soviet Union until 1991 [14,16,17]. Before becoming part of the Soviet Union, Armenia produced mainly wine and table grapes. Within the Soviet Union, Armenia had to focus on brandy production (80–90 % of grape production was used for brandy), whereas other Soviet countries, such as Georgia and Moldova for instance, were obliged to focus on wine production [18]. This led to a big change in the Armenian wine culture [14].

In 1991, after the collapse of the Soviet Union, Armenia declared its independence [19]. After the end of the Soviet era, Armenia was moving from a centralized planned economy to a free-market economy and democracy [20]. The country had many problems facing that change. The first years after the independence were very tough for the Armenian population, as the transition process caused an economic breakdown and the processing industry radically deteriorated in Armenia as well as in other Soviet countries (*ibid.*). Remarkable changes took place regarding land rights, privatization, new evolving markets due to the free market regulations and others. After the independence in 1991, many of the Armenian farmers got small plot sizes and due to the small production scale, they could not manage to finance their winemaking facilities and get access to the market in order to sell the high-valued final product [17]. This is why some farmers stopped producing grapes entirely or shifted towards new industries, whereas others continued to grow grapes and were heavily dependent on their grape sales to production plants such as wine producers or brandy factories [17].

The grape production area has gone through a tremendous decline after its 1980 peak of 36,200 ha. During the Soviet-times, Armenia processed more than 200,000 tons of grapes annually mostly for brandy, as well as some wine and sparkling wine. The major part of

the production was consumed in Russia and the Soviet Union [21]. Nowadays, the vineyard area stretches over 17,000 ha [22], from which around 2,500 ha are used for winemaking, while the majority (14,500 ha) is still used for brandy and table grape production [23]. The share used for table wine production is stable, but a steady increase in productivity is noticeable [22]. Overall, there are 35 wineries producing and selling table wine. This number has more than doubled within the last 10 years, as in particular more small-scale wineries were established [17]. Most of the wineries rely on own vineyards (vertical integration), but almost all of them also engage in vertical coordination and buy in grapes, must or wine. Some of the wine producers engage in producing and selling fruit wines and/or brandy. Fruit wines include mostly pomegranate, apricot and cherry fruits. For the production of brandy and fruit wines some technical equipment is needed, e.g. a press, barrels/tanks, for brandy a distillery etc. Only a small share of grape growers has access to the needed equipment.

As stated above the farmers’ plot sizes after the privatization were small and they relied mostly on grape sales. In 2017 the situations is mostly unchanged. In total 66,544 farmers cultivate grapes on an average plot size of 0.23 ha [23]. The farmers are still heavily dependent on selling their grapes to the few operating wineries [24]. Most of the sales are organized through oral agreements or contracts based on quantity and trust [17,25]. However, there is a current trend among wineries towards in-house grape production to control grape quality and yields, as well as variety [17,26].

Nowadays, the wine industry is again an emerging key industry for Armenia and is developing positively [27]. Until now, though, most Armenian wine-producing companies strongly focus on wine exports, as export developments were overall positive. Russia is by far the most important export market, accounting for 90% of all exports followed by the USA, Ukraine, France, Lithuania and others. Since Armenian wine exports are so undiversified, economic shocks occurring in the Russian market directly affect Armenia’s wine export dynamics. The strong devaluation of the Russian Rouble in 2014 resulted in a large decrease of Armenian wine exports (up to -40% in one year). However, the wine exports recovered, market share was regained and wine exports are increasing again. [28]

As the gross domestic product per capita is growing, the overall interest of the Armenian population in wine seems to be rising [29]. The local demand for wine is steadily increasing [30,31]. The increasing number of wine bars and restaurants in Armenia’s capital Yerevan underlines this evolution of growing interest and

demand for wine. Nowadays, especially the young population, which was part of the Velvet Revolution in Armenia in spring 2018, seems to be interested in wine and is willing to spend money on wine [29,31]. The peak of imported wines in 2011 with 717 thousand litres of wine declined heavily nearly two times in the following years, but at the same time the number of wine specialised bars and retailers is raising. Local demand on wine is steadily increasing [17,27,31]. This development in combination with a slowly increasing number of wine consumption per capita indicates an ongoing development in the interest and importance of the domestic wine production [17,32]. The consumption of wine is with 1.63 litres per capita [33] still very low, but the interest and growing importance of wine are steadily increasing and growing. A further indicator of the increasing importance of the wine sector is the establishment of the Vine and Wine Foundation of Armenia (VWFA) in 2016. The foundation is a governmental organization that represents the sector. Additionally, the organization is the responsible body for the development of the wine industry in Armenia as it takes a leading role³.

Most of the research is focused on developing towards the production of stable quantities and higher quality, accompanied by increased exports and domestic consumption in Armenia as well as wine tourism [6,16,17,24–26,31,34,35]. However, scholars have not paid much attention to the market structures as a whole.

2.2 Framework of competition intensity

The structure of the Armenian wine industry and the degree of competition were analysed using a framework based on the industry structure analysis. It provides the possibility to analyse the competition intensity within an industry as it investigates the industry conditions based on external factors. The intensity of competition implies for companies whether the industry is attractive or not. According to Porter [36], the following forces affect the intensity of competition: (1) intensity of

³ The organization represents the interests of all participants in the wine industry towards the legislator, other industry participants, and the government. The VWFA is in exchange with the government as well as the wine producers and is involved in different stages of the wine chain: Firstly, it considers the problems in viticulture that grape producers have to face e.g., grapevine breeding, determination of grape varieties, grapevine diseases etc., and supports the industry in finding solutions. Secondly, the organization is connected to wine producers and processing companies and it supports domestic and export activities (e.g., participation of wine producers at international wine trade fairs). Furthermore, the organization is engaged in developing an umbrella brand for the wine sector. Finally, yet importantly, the wine culture is promoted among consumers within the country.

rivalry among existing competitors, (2) bargaining power of buyers, (3) bargaining power of suppliers, (4) pressure from substitute products, and (5) threat of new entrants. To be able to derive strategic implications for the group of wine-producing companies and policy makers, the framework is applied from the perspective of the group of wine producers. This focus was set deliberately. Even though the wine producers differ in size (some are larger than others, but also very small 'boutique' wine producers exist), compared to other wine producers in the Old and New World countries, all wine producers are relatively small. They are located in rural areas and play an important role in the employment of the rural population in Armenia. In 2012, almost 1.500 people were permanently employed in 27 wine-producing companies. Taking into account the strong collaboration between wine producers and grape growers, the wine producers are a major sector for employment [32]. This enables grape producers to achieve higher grape prices in the medium and long term. In conclusion, the present structures contribute to rural development. Therefore, each force is applied to the Armenian wine industry from the point of view of all wine producers. The concluding predictions will be analysed in the empirical part of this study.

Intensity of rivalry among existing competitors

The Armenian wine industry has around 35 wine-producing companies, of which only six large-scale wine producers dominate the industry [32]. As the number of wine producers is quite small and the market is very transparent, the action one firm takes, except in the case of small-scale producers (households), can be seen by others. Due to the small quantities, which households produce and mainly consume privately, they have a minor influence on the market.⁴ Industry rivalry is low because the industry is small and a few large wine producers are leading the market. The positive market development [27] contributes to the low industry rivalry and gives firms the possibility to expand and grow in size. Highly specialized assets (vineyards, oenological equipment, technology) cannot be liquidized easily and bear high sunk costs for wine producers. Thus, in the Armenian wine industry, exit barriers occur. Even in the case of excess capacities, which makes it unprofitable to work in the industry, wine producers tend to stay in the market.

Prediction 1: In the Armenian wine industry, an oligopolistic market structure is present as only a few wine pro-

⁴ Thus, these small-scale producers are excluded from the analysis in this study.

ducers dominate the market. As the market is growing, existing wine producers can expand easily. Therefore, industry rivalry is low.

Bargaining power of buyers

In Armenia, there are only five big players in the category of supermarkets: *Carrefour*, *Yerevan City*, *SAS*, *Parma* and *Nor Zovq* [17]. Other retailers are mostly small but numerous and increasing. Since 2011, several wine bars and specialized retailers have started the business [17]. The first wine bar *In Vino* was opened in 2010 [31]. As the retailers are more concentrated than the wine producers (with 35 companies according to 6 [6]), the bargaining power of retailers is expected to be high. Due to the historical evolution and focus on brandy production during the Soviet era, the Armenian population also experienced a change in the wine culture. Since the country's independence, wine became emerging again. Data from 2012 to 2017 show an increasing trend in the total wine consumption in Armenia [31]. While 15 years ago, a large quantity of Eastern European and Georgian wines was still being imported and these represented the middle price segment in the food retail trade, today these imports are marginalised and Armenian wines dominate the middle price and premium price segment [31]. Wine consumption is driven by female consumers, local wines are more and more favoured, especially by younger consumers (18-34 years) [37]. The majority of wines are consumed at home, followed by events and restaurants [37]. In conclusion, retailers and final consumers can switch easily between wine producers and different products. The study by Corsi and Remaud [38] show that wine falls under the FMCG category. Thus, producers should establish branded products to stand out in the market, bind customers, and sustain in these markets. The study results of Hugger [37] show, that so far branded wines are rarely found in the Armenian wine industry.

Prediction 2: The bargaining power of retailers and final consumers is high.

Bargaining power of suppliers

The wine industry has different suppliers, such as producers of glass bottles, barrels, tanks, corks, screw-caps, labels, cardboards, fining and additives, technology and machinery. In a worldwide comparison, the Armenian wine industry is relatively small with only 2,500 ha of vines used for winemaking. A greater vineyard area is used for brandy production. Compared to European

wine countries, the quantity of wine produced in Armenia is small. As the total demand is too small, suppliers for wine industries do not set up a sales force in Armenia. For that reason, almost all the equipment has to be imported to Armenia [17].

As shown before the number of grape suppliers is rather high (in total 66,544 farmers). Compared to this, the concentration among wine producers is much higher. Therefore, buyers face low switching costs, especially because grape suppliers are often not protected by contracts [26]. The grape growers are dependent on the grape sale as it is for many the main rural income source.

Overall, grape growers can choose to sell the grape to wine or brandy producers. In general, wine producers pay more, as they demand differentiated quality criteria e.g. such as lower yields to have the right ripeness, healthiness or acidity. As an alternative, grape growers can sell to brandy producers, but brandy producers do not pay a price premium even if the grapes have a higher quality. The quality standards for brandy are lower. In contrast to table wine production, the prices for grapes for brandy are determined by a minimum sugar level and quantity only. A grape grower focusing to sell table grape quality fears the risk of not selling his grapes to a wine producer. Then he has to sell it for brandy production, but due to the lower quantity to reach the table grape quality, he will end up with less money, as brandy grape prices are mainly set due to quantity.

For a few grape growers (the minority) cultivating and selling international or rare varieties is an advantage. On the one hand, they can offer small capacities of highly demanded inputs. On the other hand, the special varieties can be seen as a kind of asset specificity. These varieties are only useful in wine-making. If these grape growers have no fixed relationships with buyers, they fear a huge risk of not selling their grapes.

Prediction 3: Suppliers of inputs other than grapes have high bargaining power, whereas grape growers have a low bargaining power towards the wine producers.

Pressure from substitute products

In Armenia, beer can be a substitute for wine⁵. Other substitutes of alcoholic beverages are spirits (including brandy), which is decreasing in consumption [17]. The market share of imported wine, which is a substitute for domestically produced wine, declined [22]. The switch-

⁵ In 2016, the per capita consumption of spirits exceeded the consumption of wine and beer in Armenia [39].

ing costs for consumers are very low, as the substitutes are available in all distribution channels at similar prices [17]. New product developments of substitute products in alcoholic beverages are very likely. According to 40 [40], globalization leads to a fast spread of innovations and product developments in the alcoholic sector.

Prediction 4: The threat of substitutes is medium. New developments and low switching costs create attractive alternatives for consumers.

business venture but the feeling of connectedness and belonging to their nation. This might be one of the reasons why only a few wine producers have entered the industry, even though entry barriers are low.

Prediction 5: The entry barriers for new entrants in the Armenian wine industry are low. The Armenian wine market is increasing in size; this makes the market attractive, creating a high threat of new entrants.

Threat of new entrants

After the collapse of the Soviet Union and the previous centrally planned economy, several wine producers entered the industry [6,32]. This indicates that entry barriers are low. Compared to European and other wine countries, the quantity of wine produced in Armenia is small and hence economies of scale and the earned profits are relatively small. Armenia has a very large diaspora with about 7 million people [31]. Some of them invest in the Armenian wine business [26]. For many, the main motivation for investment is not the profitability of the

3 EMPIRICAL STUDY

3.1 Sample and interview description

A qualitative approach was chosen for two reasons: Firstly, due to the size of the wine industry and the number of wine-producing companies as well as the number of experts in Armenia, a quantitative survey could not be carried out. Secondly, the data available on the structure and competition intensity of the domestic wine market is very limited, which also supports a qualitative approach. Thus, 41 face-to-face in-depth interviews were conducted throughout field research in Armenia in September and

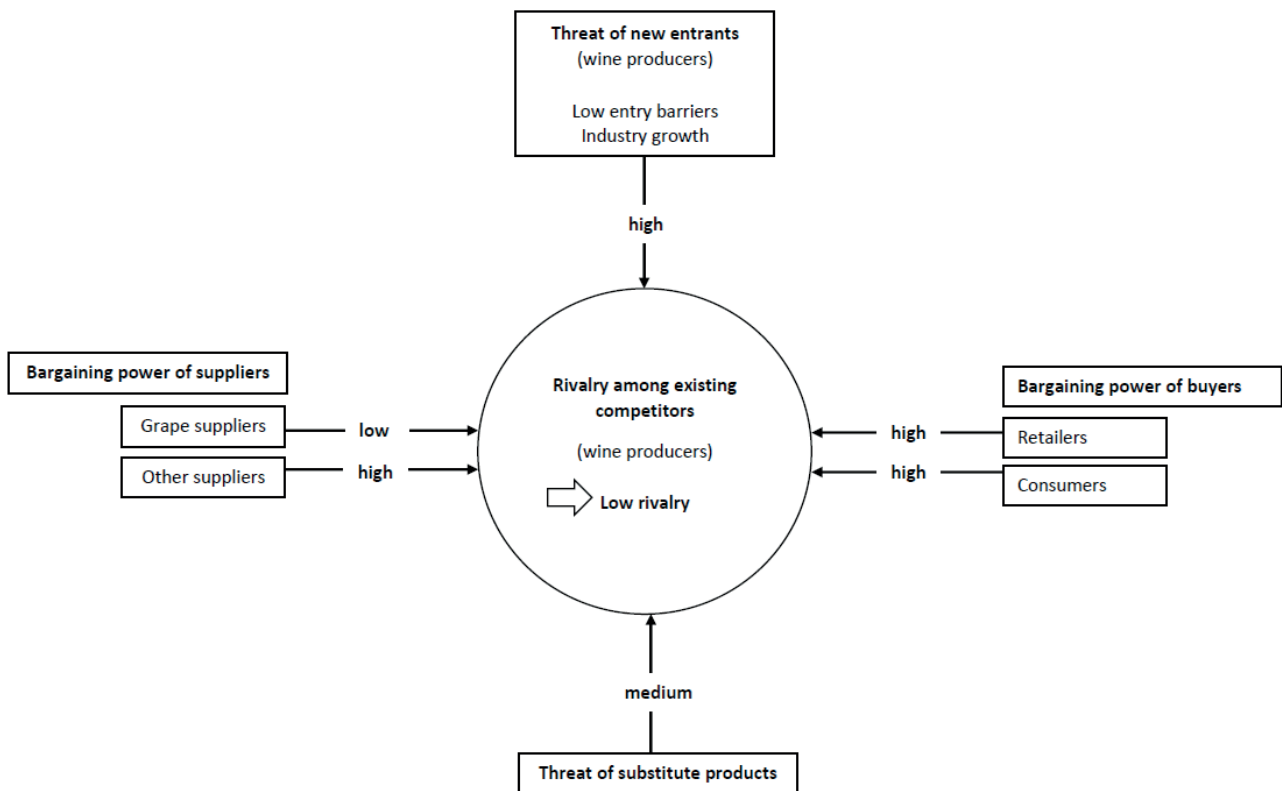


Figure 1. Summary of the expected influence of each force. (Own illustration).

Table 1. Overview of the different subgroups and number of participants.

Groups of the supply chain	Subgroups	Number of active companies	Numbers of attended companies	Percentage (%)
Wine producers		35	15	46
Suppliers	Grape growers	many	0	0
	Barrel producers	3	0	0
	Bottle producers	2	0	0
	Machinery/Agents	4	2	50
Buyers	Restaurants / Hotels	not obtainable	8	not obtainable
	Supermarket chains	5	2	40
	Wine Bars / shops	13	7	69
Other experts	Education	/	4	/
	Politics	/	1	/
	Foreign/related companies	/	2	/

Based on own research.

October 2016. For the interviews a semi-structured interview guide was developed, based on the framework in chapter 2.3. On average, one interview lasted about 32 minutes. Almost every interview was recorded with the oral approval of the interviewees. The recording gadget was a Sony ICD-BX140. Recording was not allowed in two interviews, but notes were taken afterwards. Depending on the interview partners, the interviews were carried out in Armenian, and then translated into English and German, as well as in English and German directly. In this study, the software for qualitative and quantitative research methods *MaxQDA* was used. The recording files were uploaded and with the transcription tool transcribed and then analysed.

In order to ensure a wide range of opinions and perspectives interviewees were chosen from different branches of the wine industry. In order to cover the sector, we have systematically and purposefully selected the interview partners, who are all actively working within the wine industry, considering different business models and including all parts of the supply chain. We interviewed almost 50% of all wine producers, including all large and leading companies. In addition, we have covered the majority of all relevant players from the Armenian wine industry. Accordingly, interviews were also conducted with suppliers, buyers, and other experts of institutions related to the wine industry. Four sections of interviewees can be divided:

- Wine producers: 15 wine producers of different size (including all large and leading companies), located in the countryside, were interviewed. Not every single wine-growing area has been covered.
- Suppliers: two suppliers of machinery and agents were interviewed.

- Distributors: 17 distributors were interviewed; out of these eight restaurants/hotels, two supermarkets and seven wine bars/shops.
- Experts: seven experts were interviewed. They work in key positions of closely related fields or are actively involved in the industry, e.g., politics, education, or foreign help organizations⁶.

Table 1 gives an overview of the different subgroups and the number of participants. Having conducted 41 individual in-depth interviews with all relevant players of the Armenian wine industry, we nearly achieved a representative sample, although we used a qualitative approach.

The applied research methodology is used to analyse the developed framework and to gain a deeper insight into the Armenian wine industry. Due to the explorative research character, the analysis of the interviews followed the approach of [41]. This method of analysing qualitative data is based on Mayring (2002). The advantage of the analysis following Gläser and Laudel [41] over the approach of Mayring [42] is that the category system is open, which means that new categories can be added throughout the research process when necessary. The applied research methodology is used to analyse the first level of the developed framework as basis for further implications. Secondary data that was collected to build assumptions about the peculiarity of each force is considered for the deductions within the developed framework to work out the competitiveness of the industry.

⁶ E.g., Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Centre for Agribusiness and Rural Development (CARD), Centre for the Promotion of Imports from developing countries (CBI) etc. At that time, all of the organizations were involved in projects in the Armenian wine industry.

3.2 Empirical results

The qualitative study revealed important results with regard to the prevailing market structure in the Armenian wine industry.

Regarding the intensity of rivalry among existing competitors, the interviewees verified the situation of having about 35 wine producers of different sizes, with few large-scale wine producers dominating the industry. The intensity of rivalry also depends on storage costs that can occur. Armenian wine producers had to face high storage costs during the crisis in the Russian market (Armenia's biggest export market) initiated by the Russian Rouble depreciation, which resulted in a decrease in sales for the Armenian wine producers. This example shows that external factors (e.g., crisis) can induce high storage costs and lead to price-cuttings. The Russian Rouble depreciation showed that rivalry is high in such situations, in which wine producers want to sell their stocks, and there is excess capacity in the market. Differentiation of wine producers is possible by branding and the quality level, as wine quality still differentiates strongly between producers. The market is developing positively and total consumption is growing. However, the interviews displayed that there is still potential for further growth in consumption. Caused by high sunk costs for vineyards and cellar equipment, the interviews revealed that exit barriers for established wine producers are high. The high percentage of wine producers who invested in their own vineyards (67 %) and their own cellars (80 %) emphasizes this result. Altogether, the intensity of rivalry among existing competitors can be described as low to medium. The prediction was confirmed.

Concerning the bargaining power of buyers, the interviews revealed that retailers have a large availability of different products. They can decide between imported and domestically produced wines. As there are 35 domestic wine producers, they already have a large choice. Adding imported wines, their options even increase. Most of the interviewed retailers work with contracts, only one works with loose agreements. For retailers, the contracting and delivery costs stay the same, no matter with which wine producer they decide to cooperate. Thus, retailers can switch easily between wine producers and different products. The bargaining power for all types of retailers is high. For consumers, the bargaining power is also high, because they can switch at low costs to other products or wine producers. The results confirm the prediction about the high bargaining power of buyers.

The bargaining power of suppliers of inputs other than grapes was evaluated separately, as the situation is

very different for grape suppliers and suppliers of other inputs. The interviews showed that most equipment has to be imported to Armenia. Some bigger wine producers import on their own. Apart from that, only three registered companies organize import. The interviews revealed that one reason for the low number of suppliers is that the wine industry in Armenia is not attractive enough as it is too small. Therefore, only few companies decide to set up a sales force in Armenia. Substitutes are not available. Within the country, a single bottle producer, some smaller barrel producers and printing companies exist with limited product portfolio compared to other established wine countries. These firms are too small to threaten with a forward integration. Due to the oligopolistic structures among suppliers of inputs other than grapes, these suppliers have the option for high margins; thus, they can charge prices, which are higher than the price in a competitive market. In addition, the suppliers offer different brands in their portfolio, e.g. Bucher, Europress and Della Toffola. As the press systems are (mostly) not compatible with each, wine producers cannot switch between the suppliers and compare prices. Thus, for some products the suppliers operate with monopolistic margins. The threat of wine producers to integrate backward is credible, as they can manage the import themselves. The findings suggest that a threat of backward integration is trustworthy and already 80 % of wine producers do self-import of supplies. This means that the bargaining power of suppliers is lower than expected.

For grape growers, the situation looks different. As the number of grape growers is high but only a few buyers exist, it is difficult for them to switch, whereas wine producers can easily switch to other grape suppliers. Therefore, wine producers face low switching costs, especially because grape suppliers are often not protected by contracts. Agreements are usually made orally for one year only [25]. Additionally, high transaction costs arise, as a continuous business relationship is missing. This indicates a low bargaining power for grape suppliers. In Armenia, wine producers set the prices, so these are not subject to negotiation. Grape growers are dependent on sale as this is the main source of income. Most small-scale farmers sell small quantities to wine producers. As wine producers supply grapes from many growers, they are not dependent on a specific farmer and have greater bargaining power. The lack of collaboration among grape growers contributes to the low negotiation power of the farmers. Grape farmers often lack the financial resources to threaten with a forward integration. Some grape growers who are cultivating special and highly demanded varieties have higher bargaining power, but

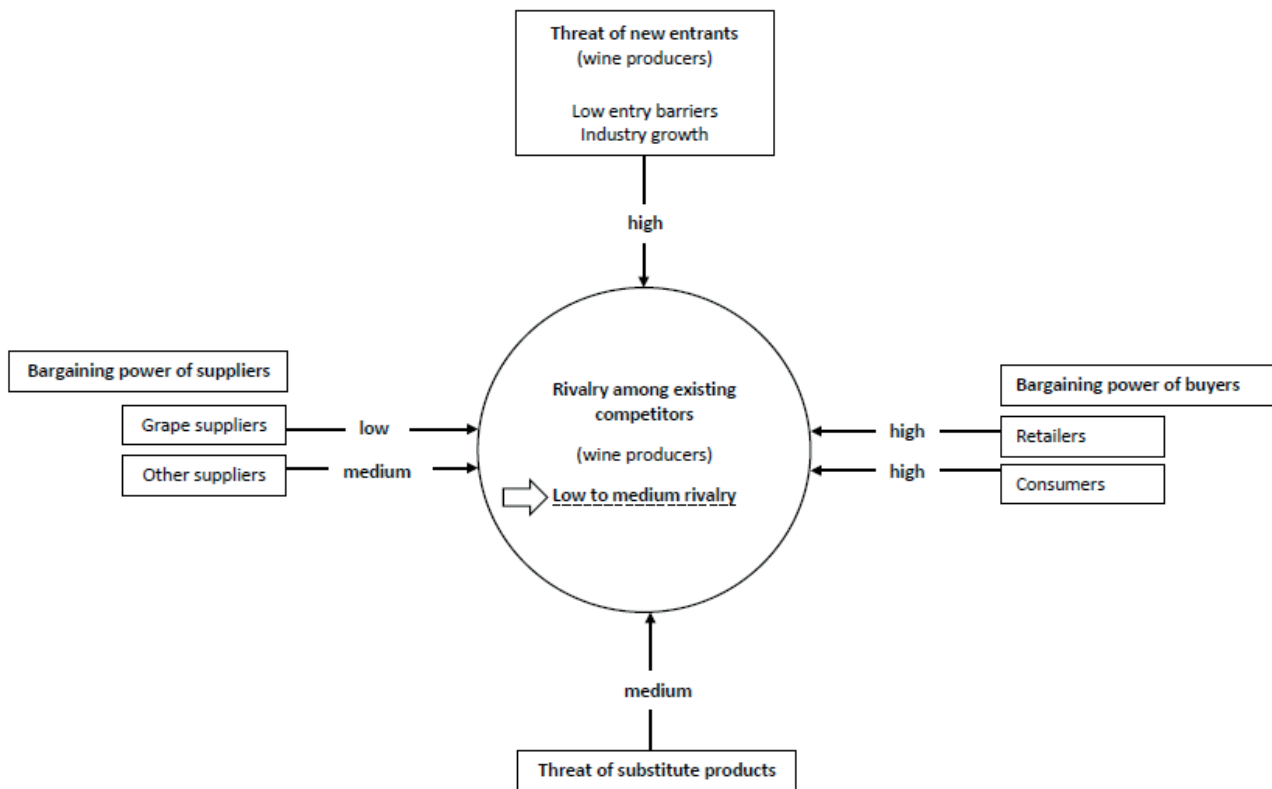


Figure 2. Summary of the peculiarity of each force.(Based on own research).

these growers represent a very small percentage. Other grape growers slightly increase bargain power if they can threaten wine producers with not accepting the instructions. This causes higher agency costs for wine producers, as they need to control or pay higher prices. Following the results of the interviews, grape suppliers generally have low bargaining power. In summary, suppliers of inputs other than grapes have medium bargaining power, while grape growers have low bargaining power. The prediction was not confirmed.

Regarding the substitutes, the results of the interviews show that vodka and spirits do not serve the same function, as wine and brandy are drunk on different occasions. Therefore, it can be stated that the pressure of these substitutes is low. Beer and fruit wines can compete to a certain extent, but for fruit wine, the market share is rather small and beer is a seasonal competitor. Imported wine is the strongest competitor, although it only possesses a market share of around 7 % of all consumed wines in 2017 [43]. For every alcoholic beverage, the switching costs for consumers are low, since it is available everywhere and within comparable price ranges and thus creating a high threat of substitutes. It is similar to new product developments. The same likeli-

hood applies to all alcoholic beverages, again increasing the threat of substitutes. In summary, the threat of substitutes is medium. The prediction was confirmed.

In terms of the threat of new entrants, it was shown that in Armenia, there are no legal administrative entry barriers for the industry as there is no official wine law until now. Some basic health and safety regulations do exist but are simple to be followed. The import of grafted international varieties, for instance, is restricted due to the threat of phylloxera⁷ that could affect all non-grafted vines in Armenia [22,26]. For entering the Armenian wine industry, capital is necessary to buy or set up new vineyards, machinery, equipment, etc. However, the capital requirements are not too high. Wine producers also have the opportunity to rent facilities and equipment of existing producers or to use services such as contract bottling, which lowers the sunk costs. Switching to other grape suppliers is easy, as the number of grape growers is high. Switching to suppliers of inputs other than grapes such as producers of glass bottles, fining and

⁷ Phylloxera is a louse or aphid that severely affects vineyards covered with vines that are not grafted. Affected vineyards have almost no chance to be recovered.

additive agents, barrels, machinery, cork suppliers, etc. is more difficult since only a small number of suppliers operate on the market and each of them with their own brands (products with different characteristics, prices and maintenance services). A change to production of wine-related products (such as fruit wine and brandy) is not as difficult as expected in advance and the costs of a switch vary between different products. As many wine producers also produce fruit wine and brandy, it is feasible with low investment costs. The switching costs to other productions such as table grapes are high as selling machinery previously used for wine production can be difficult. Furthermore, different varieties need to be planted, which can cause high costs. Overall, this leads to medium exit barriers for possible new entrants. However, since the entry barriers are low and the exit barriers are medium, this implies a high threat of new entrants. The prediction was confirmed.

4 DISCUSSION AND IMPLICATIONS

4.1 *Implications for wine producers*

The results showed that wine producers have a low bargaining power towards suppliers of inputs other than grapes as well as in negotiations with retailers. There is a need to act to support wine producers in enhancing their bargaining power towards upstream and downstream stages. Possible recommendations include (1) the collaboration among producers, (2) the establishment of a communication network among producers, (3) the strengthening of the competitive position of producers, and (4) investing in the establishment of brands.

The establishment of collaboration among wine producers creates an opportunity to increase bargaining power towards suppliers of inputs other than grapes and towards retailers. Such collaboration can be organized, for instance, by establishing a wine producers' association. The producers' association could include a producers' communication network to interconnect with other wine producers. Another example, could be collaboration among producers vertically or horizontally. 44 [44] analysed a small group of producers from Portugal, called the Douro boys and showed that the "informal network"/collaboration fostered innovation and improved their market situation by fighting competition together. The group worked together in the international wine market through collective presentation of its wines in tastings, fairs and other events, but remained independent in all other areas.

An additional possibility is to build a producers' communication network to interconnect with other wine

producers with the help of the VWFA. By being part of such a network, producers can exchange knowledge and discuss the development of the sector with the aim to strive for a common goal. Together with the VWFA, wine producers can take joint measures to increase the visibility of the umbrella brand in export markets.

Wine producers have several options to strengthen their individual competitive position. They can try to produce at lower costs by improving the production cost structures and applying economies of scale (e.g., by expanding vineyard area and the total production volume or by mergers and acquisition). In general, through merger and acquisitions the overall competition intensity decreases for the industry. However, out of the perspective of a single, individual firm, it can improve its competitive situation and help to improve the bargaining situation with grape suppliers or buyers such as retailers due to bigger quantities. Another possibility is to invest in product differentiation, which can be achieved with product development and branding. As earlier shown wine is a FMCG product, for which branding is especially important [38]. This is also related to the fourth recommendation for wine producers, which entails investments in the establishment of brands. This addresses the consumers and builds consumer loyalty establishing a long-term relationship. Wine touristic activities can serve as a measure to establish brands. In wine tourism strong emotional bonds between consumers and the brand can be created through experience. Thus, wine tourism can help wine producers to improve their competitive situation.

4.2 *Competitive policy implications*

The results show that there is still a low level of competition among wine producers in the Armenian wine industry. There are about 35 wine producers. The industry is still growing, which is proving the profitability of the industry. Oligopolistic structures are detected not only in the case of wine producers but also in other stages of the value chain. For instance, there are only a few suppliers of inputs other than grapes, especially those suppliers offering the import of supply necessary for viticulture and winemaking. Also, in downstream stages, oligopolistic structures occur. Five big players dominate the supermarkets in Armenia. Those three groups are able to charge higher prices due to the oligopolistic market structures. The implementation of measures, which help to increase the competition intensity among suppliers, wine producers and retailers, would cause a lower average market price. That, in turn, increases total welfare, especially by increasing consumer welfare. In the

case of greater competition among suppliers, wine producers would benefit, as average prices for the supplies fall. To increase the competitiveness in the wine industry in Armenia, possible implications for policy makers are (1) encouraging investments to increase competition, (2) increasing institutional infrastructure, (3) increasing the availability of data to make sophisticated decisions, and (4) fostering a regional and/or country brand.

Encouraging investments to increase competition

Although the findings presented earlier indicate a high degree of concentration of different participants along the value chain, including input suppliers, wine producers and retailers, there is no instant suggestion that the concentration has led to significant exercising of market power of any of the set firms. Still, increased competition is beneficial to consumer welfare. The promotion and support of start-ups and investments into capital, skills (e.g. for further education and training) and labour (e.g. for vocational education) could help to improve the competitive landscape. In addition, the promotion of addition markets (e.g. neighbouring countries), would also help to improve the competition situation.

The policy makers can promote the wine industry as a possible pillar for investors, no matter if they are local entrepreneurs or foreign investors. Encouraging foreign investors to do business in Armenia can contribute to the development and modernization of the local industry. This especially concerns technology and machinery needed in the wine production process, such as laboratories or anti-hail technologies, but also knowledge for marketing tools and strategies. 25 [25] showed for the Armenian wine industry that most of the inflow of foreign direct investments (FDI) originates from the Armenian Diaspora or from other investors, which have a personal connection with the country. "The overall effect of FDI is considered positive, within society and for overall developments. Constraints still exist, but examples show that the interest of investors exists and difficulties can be overcome." [25].

Increasing institutional infrastructure

The results have shown that up to now the legal setting for the wine industry in Armenia is not defined in detail. The interview results also show that wine producers require wine laws and regulations, and the enforcement of these.

There is a law on alcoholic beverages on the basis of grape raw materials, but no detailed law exclusively cov-

ering the product grape wine. A first step was taken in 2014 when Armenia joined the OIV as a member state, but the legal requirements must be implemented in the national law. The analysis showed that until now, clear legal definitions of product categories (wine, fruit wine, brandy, etc.) are missing. When purchasing wine, consumers demand a certain level of wine quality. To reach a higher quality of wines produced in Armenia, it is necessary to implement wine laws and regulations based on international standards. Standard specifications have to be set up that are valid for all grape and wine producers, which produce grapes or sell their wines commercially. This makes wines more competitive in the domestic and international market and facilitates wine exports in various countries. The wine that is sold abroad helps building trust between local consumers (also including tourists) and wine producers. Like this, local consumers see that wines are produced according to international standards, which can contribute to a higher willingness to pay for local wines. Hence, wine laws and regulations that increase the overall quality level will increase the competitiveness of the wine sector. It gives security to producers and consumers. On the one side, it enhances the chance for wine producers to sell their products, and, on the other side, it gives orientation to consumers, as they know what wine quality to expect.

Wine laws and regulations have to include specifications and minimum requirements in terms of grape cultivation, oenological practices, and regarding sales and marketing (e.g., labelling requirements, quality assessment in certified laboratories etc.). Part of this step is also to create a standardized quality assessment system and opportunities for monitoring and control. To ensure a certain quality level, a legal analysis of the products has to take place before the products can be sold. Therefore, independent and certified laboratories are necessary⁸. If the products do not match the regulations, sales have to be prevented. As many small-scale home producers exist, the regulations can only be applied to wine producers who sell through indirect sales channels.

Increasing the availability of data to make sophisticated decisions

The results indicate that there is a lack of governmental decisions regarding threats for grape growers and wine producers such as the phylloxera. Grape grow-

⁸ Certified laboratories should carry out tests on malolactic fermentation, tests on stability and protein sediments, sensory tests, and microbiological assessments. This has been recommended by März and Bitarishvili [45] in the Report on The Qvevri Wine Identity - Practice of the Qvevri Wine Cluster members.

ers are the first in the value chain to be affected by the pest, and wine producers the next when they cannot secure their supply. In order to know where the rootstocks are, which, and how many are affected, which grape and wine producers are affected, and to predict the actual scope of the crisis, a cadastre is necessary. Furthermore, the government needs such a database to plan subsidies for grape and wine producers. Thus, to be able to make governmental decisions safeguarded and purposeful, a statistical database for the wine sector has to be set up. Such a database is beneficial for public regulators, policy makers, corporate managers and researchers, who can use this information to make sophisticated decisions about innovation, profits, competition, and social welfare.

Until now, the National Statistical Service (NSS) provides a minor database. A database for the industry needs to integrate information about production areas, production quantities and qualities, planted varieties and rootstocks, land ownership, the corresponding grape growers, as well as wine and brandy producers, commercialization permits, distribution channels, trade, and consumption. It is essential to steadily collect, store and evaluate data. With these numbers, the importance of the wine industry in the context of the agricultural sector is clarified.

Fostering a regional and/or country brand

A continued investment in the VFWA can help foster the generic brand of Armenian wines. In turn a stronger regional or country brand can help to strengthen the individual brands of the wine producers [46]. 47 [47] show in their research that GI, collective brands and sector brands subsumed under shared brands facilitate the establishment of a relationship of trust between the producer and consumer, being a source of competitive advantage.

4.3 Rural development policy implications

The interview results show that there is great potential to increase wine consumption in Armenia. Besides establishing brands to increase consumer loyalty, as mentioned in the recommendations for wine producers, the government can engage to create greater awareness for the product wine. The VWFA, as governmental organization, already promotes wine culture within Armenia. Additional measures, such as the promotion and development of wine tourism in the country, lead to industry growth.

Wine tourism in Armenia can contribute to rural development [34]. So far, wine tourism in Armenia only exists on a small scale. In 2018, the project of the so-called Wine Cube started, which has built the base for further development of wine touristic activities within the country [48]. To increase wine touristic offers, policy makers should introduce potential benefits for wine producers to managers, the wine sector as a whole and the public. Additionally, the government can encourage wine producers to engage in these activities, collaborate with established tourism providers to increase the offers. This includes (I) enhancing the quality of existing wine tours, (II) developing new wine tour offers and wine tourism routes, (III) providing information on the tours and attractions offered, and (IV) training guides with needed skills and knowledge.

Wine tourism offers locals and foreigners to incite interest in such activities and in the wine sector itself. This will foster economic development in the country as it creates employment for locals in rural areas. Furthermore, it promotes cultural awareness and helps to preserve local culture and traditions. The earned money can be reinvested in infrastructure as well as the protection of the countryside. Additionally, the promotion of wine tourism does not only foster the wine industry it also has cross border effects due to collaboration. This means, that wine tourism is only successful when a regional network including several actors, such as various overnight offers (hotels, B&Bs etc.), gastronomy and others (museums, art galleries, regional tourism organizations etc.) work together offering a holistic touristic experience. In this case, besides the wine producers all other collaboration partners bloom as well, thus (wine) culture is promoted on a broad base [49].

The results of the industry analysis showed that the bargaining power of grape suppliers is quite low. Farmers often possess small plot sizes. There is a high number of smallholders and they depend on the grape sales, as this is often the only source of income. Hence, the government and VWFA should not only try to engage collaboration among producers but also among grape growers. An overall more professional type of relationship between grape suppliers and wine producers can be established by fostering the usage of mid- to long-term contracts, including the compliance of contract terms and contract monitoring. This would help to protect smallholders as well as wine producers and allow them to reduce uncertainty in the business relationship. Besides, the government can promote collaboration among smallholders by either establishing a grape grower association or cooperatives. These kinds of partnerships between smallholders increase their bargaining power towards

buyers and give them the opportunity to exchange knowledge, which can lead to the production of higher quality grapes and a higher income. 50 [50] showed that collective action by local and international governmental and non-governmental institutions and organizations may enhance farmer's market performance. In their study, 50 [50] found that training and learning support is the main trigger to enhance farmer performances. In the case of governmental support, however, the government should only serve as a facilitator, providing capacity development in terms of management, contract negotiation, market research, supply chain analysis and book-keeping for the farmer organizations to develop independent and sustainable structures [51].

Governmental support already exists to a limited extent (e.g., regional development centres where agronomists share their knowledge with the farmers) but measures should be more target-oriented, reaching more farmers with the same effort. The government can establish a centre in the capital Yerevan for all grape growers, where experts in viticulture offer consulting services without charging the individual farmers. Another possibility of governmental support is to offer subsidies for loans to emancipate farmers to take business decisions e.g., to change to other crops, to change to other varieties, to increase the size of the cultivated vineyard area etc. In this way, the government can provide security to farmers in dangerous income situations.

In terms of production, farmers need adjusted plant material of high quality and nurseries for the reproduction of plants for a stable production of high-quality grapes. For special agricultural problems that can occur in the industry, as for example phylloxera in viticulture, the government should provide state support concerning plant material and nurseries. In addition, the VWFA must give recommendations and advice to grape growers and wine producers on how to deal with specific agricultural problems. As no centralized organizations can assure an equal information distribution among farmers, some farmers have a lack of information and are not aware of the risk the phylloxera poses to their vineyards and income situation. A possibility for a recommendation given by the VWFA would be grafting of local varieties on resistant rootstocks. Furthermore, it should negotiate with the Armenian government in order to achieve the subsidization of grafting.

5. CONCLUSION

With this study, the industry structure of the Armenian wine industry and its competition intensity is

shown. Armenia was chosen as an example for other transition countries in the Caucasus. The results of the interviews, which have been conducted, permit to derive implications for wine producers and policy makers.

Recommendations, which address the increase of the bargaining power of wine producers towards suppliers and retailers, include (1) the collaboration among producers, (2) the establishment of a communication network among producers, (3) the strengthening of the competitive position of producers, and (4) investing in the establishment of brands.

The competitive policy implications aim at three main areas: (1) encouraging investments to increase competition, (2) increase institutional infrastructure, and (3) increase the availability of data to make sophisticated decisions. The attractiveness of the industry should be promoted among local entrepreneurs and foreign investors. To build a sufficient institutional infrastructure and to reduce the uncertainty of market participants, policy makers should aim to establish laws and regulations for the Armenian wine industry, as well as to develop a quality assessment system. The establishment of a widely accessible statistical database about production, distribution and consumption gives policy makers and managers the opportunity to make informed decisions. Rural policy implications enclose the promotion and growth of wine touristic activities, the protection of smallholders by building more professional relationships along the value chain, the collaboration among smallholders, the establishment of cooperatives and state support for special agricultural problems (e.g. phylloxera).

These implications may contribute to an increase in the overall competition and the development of the wine industry in Armenia. With such a development, the country could overcome the struggles of building a strong sector with vital competition and foster the industries' development.

REFERENCES

- [1] P. Cook, Competition policy, market power and collusion in developing countries: chapter 2, in: P. Cook, C. Kirkpatrick, M. Minogue, D. Parker (Eds.), *Leading Issues in Competition, Regulation and Development*, Edward Elgar Publishing, 2004.
- [2] K.S. Friesenbichler, M. Böheim, D.C. Laster, *Market Competition in Transition Economies: A Literature Review*, SSRN Journal (2014). <https://doi.org/10.2139/ssrn.2490427>.
- [3] N.G. Mankiw, M.P. Taylor, *Economics*, Thomson, London, 2006.

- [4] Z. Lerman, C. Csaki, G. Feder, Evolving farm structures and land use patterns in former socialist countries (2004).
- [5] V. Paraušić, B. Mihailović, V. Hamović, Imperfect competition in the primary agricultural commodity market in Serbia, *Economic annals (Ekonomski anali)* 55 (2010) 113–150. <https://doi.org/10.2298/EKA1084113P>.
- [6] C. Faria, L. Vanneron, The Wine Sector in Armenia: A study of the industry's competitiveness and recommendations for investments and policy instruments for export promotion PART I. ADB - TA 9045 ARM: Industrial Policy Wine Sector Evaluation, Investment Requirements, and export strategy policy instruments, 2016.
- [7] D. Aylward, J. Glynn, B. Gibson, SME innovation within the Australian wine industry: A cluster analysis, *Small Enterprise Research* 14 (2006) 42–54.
- [8] J. Novotna, L. Novotny, Industrial clusters in a post-socialist country: The case of the wine industry in Slovakia, *Moravian Geographical Reports* 27 (2019) 62–78.
- [9] M. Dressler, I. Paunovic, Converging and diverging business model innovation in regional intersectoral cooperation—exploring wine industry 4.0, *EJIM* 24 (2021) 1625–1652. <https://doi.org/10.1108/EJIM-04-2020-0142>.
- [10] M. Dressler, Innovation management of German wineries: from activity to capacity—an explorative multi-case survey, *Wine Economics and Policy* 2 (2013) 19–26. <https://doi.org/10.1016/j.wep.2013.05.002>.
- [11] RA, 2014–2025 Strategic Program of Prospective Development, 2020. <https://www.gov.am/files/docs/1322.pdf> (accessed 12 May 2020).
- [12] S. Ghvanidze, L. Bitsch, J.H. Hanf, M. Svanidze, “The Cradle of Wine Civilization”—Current Developments in the Wine Industry of the Caucasus, in: L. Badalyan, B. de Cordier, F. Guliyev, D. Lezhava, L. Di Puccio, J. Perović, H. Pleines, A. Polese, L. Simão, K. Turmanidze (Eds.), *Agriculture and Trade with Russia*, 2020, pp. 9–15.
- [13] J.H. Hanf, Outline of the Azerbaijani wine business: paper presented at the 9th Annual Conference of the American Association of Wine Economists (AAWE), Mendoza, 2015.
- [14] L. Bitsch, S. Ghvanidze, J.H. Hanf, “Die Wiege des Weinbaus” - weinwirtschaftliche Entwicklung im Kaukasus, in: M. Stoll, H.-R. Schultz (Eds.), *Deutsches Weinbaujahrbuch 2019*, Verlag Eugen Ulmer, Stuttgart, 2018, pp. 144–149.
- [15] J.H. Hanf, Vertical integration in the Azerbaijani wine business, *Journal of Applied Management and Investments* 5 (2016) 92–99.
- [16] N.J. Scannell, J.G. Newton, R. Ohanian, Viticulture, Wine Production, And Agriculture In Armenia: Economic Sectors In Transition, *JABR* 18 (2002). <https://doi.org/10.19030/jabr.v18i4.2125>.
- [17] L. Bitsch, A structural analysis of the Armenian Wine Industry: Elaboration of strategies for the domestic market [thesis], Giessen: Justus-Liebig-Universität / Hochschule Geisenheim University. Yerevan: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2017.
- [18] N. Khachatryan, M. von Oppen, Assessing the market potential of brandy produced in Armenia, Berlin, 1999.
- [19] MFA, Armenia: A Land of Century-Long and Rich History: Restoration of Armenian Independence: Third Republic of 1991, 2020. <https://www.mfa.am/en/history/> (accessed 25 April 2020).
- [20] J. Odling-Smee, *The Economic Transition in Armenia*, Yerevan, Armenia, 2001.
- [21] H. Johnson, J. Robinson, *The world atlas of wine*, seventhth edition, Mitchell Beazley, London, 2013.
- [22] National Statistical Service of the Republic of Armenia, *Statistical Yearbook of Armenia 2016*, 2016. <http://www.armstat.am/en/?nid=586> (accessed 20 October 2016).
- [23] V. Urutyun, *Assessment of Management Systems of Wineries in Armenia*, Yerevan, Armenia, 2017.
- [24] J.H. Hanf, S. Atoyian, L. Bitsch, T. Gagalyuk, Supply chain networks in the Armenian agribusiness: Setting a benchmark, *ECONOMIA AGRO-ALIMENTARE* (2019) 359–378. <https://doi.org/10.3280/ECAG2019-002010>.
- [25] J.H. Hanf, V. Marquardt, V. Urutyun, A. Babayan, The impact of foreign direct investment on the agribusiness of transition countries: the example of the Armenian wine business, *International Journal of Business and Globalisation* 16 (2016) 423–447.
- [26] V. Marquardt, J.H. Hanf, Assessment of foreign influence on the Armenian wine business: Review of the Vineyard Data Quantification Society and the European Association of Wine Economists, *Enometria* 5 (2012) 27–44.
- [27] Vine and Wine Foundation of Armenia, *History*, 2020. <http://vwfa.am/history/> (accessed 15 April 2020).
- [28] Comtrade, Online database, 2020. <https://comtrade.un.org/data>.
- [29] BBC, Did wine cause a full-scale revolution in Armenia?, 2019. <http://www.bbc.com/travel/>

- story/20190129-did-wine-cause-a-full-scale-revolution-in-armenia.
- [30] Vine and Wine Foundation of Armenia, Development of Wine Sector in Armenia, Yerevan, Armenia, 2018.
- [31] A. Harutjunjan, S. Ghvanidze, L. Bitsch, J.H. Hanf, Analyse des Konsumverhaltens auf dem armenischen Weinmarkt, in: M. Stoll, H.-R. Schultz (Eds.), Deutsches Weinbaujahrbuch 2020, Verlag Eugen Ulmer, Stuttgart, 2019, pp. 58–64.
- [32] ICARE, Baseline Study of the Armenian Wine Sector, Yerevan, Armenia, 2014.
- [33] Avenue Consulting Group, Armenian Alcoholic Beverages Market and Industry Overview, Yerevan, Armenia, 2015.
- [34] A. Harutjunjan, M. Loseby, The Prospects For Wine Tourism As A Tool For Rural Development In Armenia—The Case Of Vayots Dzor Marz1, *Economics of Agriculture* (2011) 661–679. <https://doi.org/10.22004/AG.ECON.245091>.
- [35] V. Urutyanyan, A. Yeritsyan, Assessment of training needs of winemakers and management systems of the wineries in Armenia, *BIO Web of Conferences* 5 (2015) 3005. <https://doi.org/10.1051/bio-conf/20150503005>.
- [36] M.E. Porter, *Competitive strategy: Techniques for analyzing industries and competitors*, first. Free Press export ed., Free Press, New York, 2004.
- [37] A.E. Hugger, *Consumption in Armenia - An Analysis of the Wine Demand: Bachelor-Thesis*, 2018.
- [38] A.M. Corsi, H. Remaud, How wine is really purchased? A systematic multi-country, multi-panel analysis, *Current Opinion in Food Science* 33 (2020) 78–84.
- [39] WHO, Armenia – Alcohol Consumption and Patterns, 2018. https://www.who.int/substance_abuse/publications/global_alcohol_report/profiles/arm.pdf?ua=1 (accessed 15 April 2020).
- [40] D.H. Jernigan, The global alcohol industry: an overview, *Addiction* 104 Suppl 1 (2009) 6–12. <https://doi.org/10.1111/j.1360-0443.2008.02430.x>.
- [41] J. Gläser, G. Laudel, *Experteninterviews und qualitative Inhaltsanalyse als Instrumente rekonstruierender Untersuchungen*, fourth. Aufl., VS-Verl., Wiesbaden, 2010.
- [42] P. Mayring, *Einführung in die qualitative Sozialforschung: Eine Anleitung zu qualitativem Denken*, sixth ed., Beltz, Weinheim, 2016.
- [43] K. Baghdasaryan, *Development of Wine Sector in Armenia*, Yerevan, Armenia, 2018.
- [44] J. Rebelo, D. Muhr, Innovation in wine SMEs: the Douro Boys informal network, *Studies in Agricultural Economics* 114 (2012) 111–117.
- [45] U. März, I. Bitarishvili, *The Qvevri Wine Identity - Practice of the Qvevri Wine Cluster members*, Tbilisi, Georgia, 2017.
- [46] M. Devigili, T. Pucci, L. Zanni, From firm's brand identity to cluster's brand identity: a web-based analysis of Tuscan wineries, *IJWBR* 30 (2018) 374–393. <https://doi.org/10.1108/IJWBR-09-2017-0057>.
- [47] V.A. Castro, J.d.M.E. Giraldo, Shared brands and sustainable competitive advantage in the Brazilian wine sector, *IJWBR* 30 (2018) 243–259. <https://doi.org/10.1108/IJWBR-04-2017-0019>.
- [48] BKwine, *The Wine Cube can help Armenia develop its wine tourism?*, 2018. <https://www.bkwine.com/features/more/wine-cube-can-help-armenia-develop-wine-tourism/> (accessed 8 February 2020).
- [49] F. Contò, D. Vrontis, M. Fiore, A. Thrassou, Strengthening regional identities and culture through wine industry cross border collaboration, *British Food Journal* 116 (2014) 1788–1807. <https://doi.org/10.1108/BFJ-02-2014-0075>.
- [50] L. Orsi, I. de Noni, S. Corsi, L.V. Marchisio, The role of collective action in leveraging farmers' performances: Lessons from sesame seed farmers' collaboration in eastern Chad, *Journal of Rural Studies* 51 (2017) 93–104. <https://doi.org/10.1016/j.jrurstud.2017.02.011>.
- [51] A. Gramzow, P.J. Batt, V. Afari-Sefa, M. Petrick, R. Roothaert, Linking smallholder vegetable producers to markets - A comparison of a vegetable producer group and a contract-farming arrangement in the Lushoto District of Tanzania. *Journal of Rural Studies*, 63, 168–179, *Journal of Rural Studies* 63 (2018) 168–179. <https://doi.org/10.1016/J.JRURSTUD.2018.07.011>.



Citation: Elena Barbierato, Iacopo Bernetti, Irene Capecchi (2022) What went right and what went wrong in my cellar door visit? A worldwide analysis of TripAdvisor's reviews of Wineries & Vineyards. *Wine Economics and Policy* 11(1): 47-72. doi: 10.36253/wep-10871

Copyright: ©2022 Elena Barbierato, Iacopo Bernetti, Irene Capecchi. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/wep>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

What went right and what went wrong in my cellar door visit? A worldwide analysis of TripAdvisor's reviews of Wineries & Vineyards

ELENA BARBIERATO*, IACOPO BERNETTI, IRENE CAPECCHI

¹ DAGRI - University of Florence, Ple delle Cascine 18, 50144 Florence, Italy. E-mail: elena.barbierato@unifi.it; iacopo.bernetti@unifi.it; irene.capecchi@unifi.it

*Corresponding author.

Abstract. The purpose of this work is to study the issues of service quality and service failure during visits to cellar doors in the five regions where wine tourism is most developed: Hunter Valley (AU), Mendoza (AR), Napa Valley (the USA), Stellenbosch (ZA), and Tuscany (IT). We propose a methodology based on a combination of sentiment analysis and natural language processing applied to 89,672 TripAdvisor reviews. The results indicate that the issues most linked to service quality and service failure are as follows (in the order of importance): the quality of the main wine product, the experience in the tasting room, the organized tours, the empathy of the staff, the reliability of the staff, and the setting of the cellar and landscape. These themes are common to all five wine tourism regions, but each region treats them differently. The results obtained confirm and expand the results of previous studies and may prove useful both to professionals (wineries, tour operators, and travel agents) and for the design of a product that meets the needs of wine tourists. The main limitation of the study concerns the application of the methodology to the five most developed wine regions in the world; therefore, the results obtained may not be immediately applicable to the wine regions that are starting to develop wine tourism.

Keywords: wine tourism, cellar door, service quality, service failure, TripAdvisor, sentiment analysis, natural language processing.

1. INTRODUCTION

Wine tourism industry has been shown to play a key role in regional rural development, and thus, tourism is one of the important and developing parts of the wine industry, even on an international scale [1]. The feature that most characterizes wine tourism involves visits to cellar doors [2] Visits to cellar doors create a direct relationship between producers and consumers of wine that can last over time [3]. Such visitors often research products when they return home, which results in positive word-of-mouth marketing to friends, family, and colleagues [4], [5]. From an economic point of view, direct sales in a cellar bring greater added value because of the minimum distribution costs and the consequent high associated margins [4]. Winery

visits are an important part of wine tourism and contribute to the development of the wine sector [6].

A key element in the success of winery visits is customers' perceptions of the quality of service. Quality of service is essential to develop the relationship between customers and brands and allows the implementation of relationship marketing strategies [5].

Although a range of tools is available to measure and evaluate the quality of service, only a few of them have been applied to the field of wine tourism. Such tools are predominantly based on questionnaires [5], [7], [8], mainly employing the well-known SERVQUAL model and its variants [9], adapting it to the specificities of the wine sector [5], [10]. However, the use of questionnaires has the limitation of poor generalizability of results. This is because case studies consider a handful of consumers attending one or a few wineries within a single wine tourism region.

There is also a lack of studies on the factors that determine service failure in winery visits. Poor service or service failure results in dissatisfaction, which, in turn, manifests in a series of responses that may include complaints and negative word of mouth. In the work of Magnini and Ford [11], service failures were defined as "any service-related mishaps or problems (real or perceived) that transpired during a customer's experience with a firm." By better understanding the causes of customer complaints, the number of problematic events can potentially be reduced, and better remedies can be provided. Therefore, attempts to develop a clearer understanding of problem areas benefit both winery owners and customers.

Researchers have recently started measuring the service quality and service failure of hotels through the analysis of reviews left by users on travel sites [12], [13]. Travel sites allow users to freely express opinions on the perceived quality of service, and from these reviews, a measure of the quality of service can be obtained through a semantic analysis of the content. These data can be considered complementary to questionnaires, as they have a very different nature. On the one hand, such data is not structured around variables or concerns, as it happens with existing validated questionnaires, so that it cannot be used to provide a summative assessment of quality. On the other hand, it has the potential to discover aspects of quality that are overlooked or given less importance in existing questionnaires.

A further gap that emerged from the analysis of the literature is that the research on the quality of service of visits to wine cellars is geographically limited to very few wine regions, located mainly in Australia. International travel sites allow reviews to be accessed from around the world [5, 6,7].

The research questions (RQs) that our work attempts to answer are:

RQ1: Is it possible to measure service quality and service failure through a semantic analysis of the reviews made by users on travel sites?

RQ2: What are the determinants of service quality that emerge from reviews made by users on travel sites?

RQ3: What are the determinants of service failure that emerge from reviews made by users on travel sites?

RQ4: What are the factors that determine the quality and failure of service that are common globally? What are the typical determinants of the quality of wine regions?

This article is structured as follows. First, the literature review provides an overview of past studies within the theoretical framework of winescape, service quality assessment, and the use of data from social media in the wine tourism industry. Then, the methodology section describes the research context, data collection process, and procedures used to perform content analysis of web reviews. The results section identifies the major themes of service quality and service failure. The discussion section focuses on the answers to the research questions and the comparison of the research findings with the results of other approaches, with reference to SERVQUAL. The last section reports the managerial implications, limitations, and possibilities for future research.

2. LITERATURE REVIEW

Wine tourism is a complex product that combines the purchase of a market good, wine, with the enjoyment of intangible assets, such as the landscape and the information provided by the guide and wine producers. The study of wine sales from wineries through the analysis of social media data encompasses four theoretical fields of research: wine tourism, winescapes, theories of quality of service, and content analysis/lexical analysis theory applied to social media. In this literature review, we provide brief references to these three research fields as applied to cellar door visits.

2.1. Wine tourism

The number of articles published on wine tourism has been steadily growing since the mid-1990s. Based on prior literature, a framework for wine tourism was explored by Carlsen [14], in which production- and consumption-based research can be placed. A classification of the wine tourism literature was then conducted by Mitchell and Hall [15], who identified eight themes:

1) wine tourism development; 2) winery and cellar door; 3) wine tourist behavior; 4) wine events and festivals; 5) marketing and promotion; 6) critical success factors; 7) wine tourism models; and 8) education and more. Between 2005 and 2014, there was an increase in theory building in wine tourism research, referring to theory to provide theory [15]. Theory-based research has focused on the analysis of wine regions' image [16] and service quality [5].

2.2. Winescape concept

One of the most prolific topics in wine tourism is the analysis of wine regions' image through the identification of wine tourism attributes [15], [17]. The dimensions of the servicescape (i.e., the atmosphere that enhances the customer experience and influences buyer behavior during the service encounter) were adapted and applied by Peters [18] in a winescape concept by highlighting attributes that are attractive to wine tourists. First, Peters [18] identified three fundamental elements that shape a winescape: "(1) the grapes and their needs, (2) the natural environments that best meet those needs, and (3) the viticulturists and wine makers who determine everything from the varieties of grapes, spacing of the vines, and trellising systems to the final product that enters the bottle."

Johnson and Bruwer's [19] conceptual definition specifically encapsulated the interplay of natural landscape and setting; heritage, architecture, and artifacts within a winery, winery's vineyard, cellar door, and wines; complementary products and services; signage and layout; and people at a winery.

The winescape scale developed in more recent studies is based on a plurality of theories: servicescape theory, multi-attribute theory [20], and destination choice (push-pull) theory [21]. Thomas et al. [22], from a meta-analysis of 70 supply related winery articles, defined seven key attributes of a winescape:

1. The natural environment and scenery such as the natural landscape, vineyards, and rural setting referred to in the current study as the winescape setting attribute.
2. Built environment such as wineries, cellar doors, and buildings, and the heritage that they convey were identified as the winescape atmospherics attribute.
3. Wine products such as reputable wines, wine variety, and value-for-money wines were referred to as the winescape wine product attribute.
4. Complementary services such as restaurants, accommodation as well as other local produce and craft

were identified as the winescape complementary product attribute.

5. Signage and information such as signposting and informational materials were referred to as the winescape signage attribute.
6. Layout and infrastructure connecting the physical attractions such as wine routes and roads were identified as the winescape layout attribute.
7. Service staff who interact with wine tourists were referred to as the winescape service staff attribute.

2.3. Service quality in cellar door visits

Service quality (SQ) originates from comparing perceived expectations (E) of a service to perceived performance (P), resulting in the equation $SQ = P - E$ [23]; service failure can be defined as service performance falling short of customer expectations [24].

Most of the research conducted in Australia on service quality at cellar doors is based on an adaptation of the SERVQUAL methodology. The SERVQUAL methodology, proposed by Parasuraman, Zeithaml, and Berry [9], constructs a measure of perceived quality and, therefore, of customer satisfaction through a comparison of customer expectations in approaching a type of product/service and the perceptions of the product/service after consumption. It is a highly standardized quantitative methodology designed specifically to measure clients' opinions on the quality of services. This makes it possible to compare the expectations and perceptions of users regarding a specific service. It consists of a series of 22 questions valid for each type of service that make it possible to measure perceived quality and expectations separately for five dimensions considered essential for judging service quality. The dimensions are as follows:

1. Tangible elements (appearance of physical facilities, equipment, and personnel);
2. Reliability (ability to deliver the promised service reliably and accurately);
3. Responsiveness (willingness to help customers and provide service promptly);
4. Reassurance (competence and courtesy of employees and relative ability to inspire trust and confidence);
5. Empathy (caring and personalized assistance given to customers and users).

Some authors have adapted and applied SERVQUAL's methodology to analyze the quality of service during the visits at cellar doors by assessing dimensions using Likert scales.

O'Neil and Charters [4], in a study in the Margaret River region (AU), implemented a two-stage methodology, the first stage being a qualitative descriptive analysis

through eight interviews with cellar door operators, and the second stage was based on 150 interviews through a specific questionnaire developed through an adaptation of the SERVQUAL methodology. Similarly, O’Neil et al. [5] applied the SERVQUAL methodology by adapting it to 10 wineries in the Margaret River region and in the Barossa Valley (AU). For both surveys, respondents were asked to rate their perceptions of the dimensions listed on a five-point Likert scale. The scale items were grouped according to whether they were “wine-related” or “staff-related,” and represented many of the original SERVQUAL dimensions. The items that comprised each dimension were based on King et al.’s (1997) [25] service quality model for cellar doors, which emphasized the importance of product and service quality for cellar doors’ success.

Griffin and Lopersch [26] applied a modified version of the SERVQUAL model in Canberra District (AU). The authors identified 23 quality attributes across six dimensions: external, internal, service, staff, wine, and convenience attributes. The external and internal attributes related to the physical qualities of wineries, with the former associated with the environment and surroundings of wineries, and the latter relating to the layout and character of tasting rooms.

Gill et al. [6], in research in the Margaret River and Swan Valley, instead, adopted a multidimensional model derived from Sweeney and Soutar’s [27] PERVAL and Petrick’s [28] SERV-PERVAL measures. The authors derived five dimensions from the SERV-PERVAL measures: quality (Q), emotional value (EV), price (P), social value (SV), and reputation (R). The questionnaires were structured on a seven-value Likert scale.

The only study we found outside Australia was carried out in Greece by Nella and Christou [29], who applied a structural equation model that incorporates three temporal dimensions of the winery experience: before the visit, on-site, and after the visit.

2.4. *The use of social media data in wine tourism research*

According to Lockshin and Corsi [30], social media marketing is an interesting field of research in wine tourism research. There is an increasing amount of social media research on wine. Initially, research focused on the microblogs of wine consumers [31] and then expanded to Twitter [32] and Facebook [33] platforms. In the last three years, social media has been used to study the behavior of wine tourists. Brochado et al. [34] used 4,114 online reviews of 52 wine hotels located in 27 wine regions across 11 countries to identify key themes related to wine hotel experiences. Brochado et al. [35]

identified the sustainability dimensions of organized tours from the point of view of tourists by analyzing 878 reviews of 20 tours in Portugal, written on TripAdvisor. Terziyska and Damyanova [36] employed 118 reviews on TripAdvisor to define the attributes of winescapes, as seen from the perspective of travel arrangements for a wine tour company in Piedmont, Italy. Brochado et al. [37] collected 470 wine tourism reviews posted on TripAdvisor in the Douro wine region and used them to identify sensory perceptions during winery visits. Vo Than and Kirova [38] analyzed with netnographic approach 825 original reviews posted on TripAdvisor by tourists who visited Cognac (France). The results showed that the experiences were globally positive and that experiences related to the dimensions of education and entertainment were predominant.

Finally, in a recent study [39], social media was used to identify and characterize the behavior of the “Masters of Wine” community on Twitter, as well as to determine the impact of these renowned wine experts through this platform. All Twitter profiles belonging to the Masters of Wine’s award-winning users were identified and analyzed. Additionally, a set of 35,653 tweets posted by the Masters of Wine were retrieved and analyzed using descriptive statistics.

3. METHODOLOGIES

3.1. *Study areas*

Wine, landscape, heritage, and tourism are all keywords that characterize wine tourism both in the Old World of Wine (Europe) and in the New World (the USA, South America, South Africa, and Australia). Currently, vineyards around the world represent not only a fundamental agricultural resource that guarantees rural development but also a great economic resource that allows the enhancement and maintenance of the same cultural wine landscapes and the development of the entire region [40].

According to the rankings on the TripAdvisor platform, based on the number of reviews, the top five wine destinations in the world are: Tuscany (Italy) in first place, followed by Napa Valley (the USA), Hunter Valley (Australia), Stellenbosch (South Africa), and Mendoza (Argentina). While Tuscany has a long tradition, the other wine regions of the New World were established and developed very quickly, but with great success.

In Chianti region, the integrated tourist offering is coordinated by eight wine routes. The wine routes, regulated by Italian Law n. 268/1999, bring together wineries, restaurants, hotels, wine bars, and other public and pri-

vate facilities, clearly using the typical wine of the area as a physical and cultural link between all the subjects involved. This joint management encourages tourists to organize their stay in a way that allows them to experience the territory on an oenological and intellectual level. The museums of wine and vines, which are in almost all Italian regions, help in promoting and communicating wine culture, although they differ in thematic approach, as well as in their size and history [41].

In Napa Valley, the wine sector presents itself as an economy in its own right with many services, wherein the business model focuses on the diversity and originality of the wineries' design, a new attractive resource to guarantee their reputation and draw the largest number of visitors, both oenophiles and lovers of contemporary art. The suppliers of wine tourism in Napa Valley also recognize the need to continue to evolve as people search for innovation and trends, while maintaining the brand that the region was built upon. This is manifesting itself in the addition of new restaurants, hotels, and wineries. Leaders and suppliers of the Napa wine tourism experience are also looking at creating dedicated bike trails, zip lines, and other activities to add to the physical and figurative landscape of the Napa wine tourism destination experience [42].

In Hunter Valley, food and wine represent one of the top three motivational drives for international tourists to Australia among the aquatic and coastal experiences, nature, and wildlife. In Australia, wine trails are not as developed as in Europe. However, regional and local government agencies have developed tourism routes where wine experiences are part of a broader tourism theme combined with other experiences [41].

The wine industry in Stellenbosch has an active wine tourism market, well-developed facilities, and infrastructure. However, despite the fact that the first South African wine road was established as early as 1971, association networks are currently non-existent or underdeveloped [43].

The vision of Mendoza's wine tourism development was based on the strength of identity, culture, and landscape. In particular, its architecture has contributed greatly to the prestige and attractiveness of wine tourism. It projects, by recognizing historical dynamics, nature, and society, the quality of life with identity [41].

Despite having different marketing strategies, these wine regions share the same aims: to enhance their heritage, grow their economy, satisfy the needs of existing customers, and attract new ones, in particular through wine routes, organization of events, and the combination of wine and food. Therefore, we have chosen the five main wine tourism destinations according to the

TripAdvisor platform as study areas to understand their strengths and weaknesses and, in particular, to draw up useful guidelines at a global level.

3.2. *TripAdvisor as an evaluation source*

TripAdvisor is one of the most popular networks for sharing travel experiences. As of 2018, it had collected over 570 million reviews and opinions on over 1.2 million accommodations. TripAdvisor not only collects reviews on hotels and restaurants but is open to all tourist interest activities, including the specific category of winery visits.

One of the most appreciated features of TripAdvisor in marketing research is its reliability. The platform has an efficient, automated quality control and review reliability system that involves many parameters. The system compares incoming reviews for a given activity with the historical patterns already examined for that activity by identifying suspicious anomalies in the patterns (TripAdvisor, 2021, <https://www.tripadvisor.com/TripAdvisorInsights/w3690>). In addition, several studies have been conducted to analyze the credibility of this website [44].

When writing a review, guests also have the option to rate their overall experience on a scale of 1 to 5 "bubbles," with 1 being a poor rating and 5 being an excellent rating. Valdivia et al. [45], in recent research, showed that the TripAdvisor rating system presents a problem: users tend to rate the overall experience positively, but there may also be negative comments within a review. Likewise, in an average or negative evaluation, there may be positive evaluations of the relevant aspects of service quality. To analyze and evaluate reviews efficiently, it is necessary to separate positive and negative aspects. Taking this into account, we identified a methodology for identifying and separating positive from negative sentences in reviews. Positive sentences contain the relevant qualitative elements of service quality, whereas negative sentences contain the relevant elements of service failure. Once we obtained two series of subreviews, one with only positive sentences and the other with negative sentences through a text mining analysis, we identified the relevant elements of service quality and service failure.

3.3. *Review processing*

The methodology of this study is articulated in the following steps. First, we identified the most relevant wine-tourism regions at the international level. Then, we verified the reliability of the TripAdvisor platform for the identification of key elements of consumer satisfac-

tion using prior literature. Finally, we built an algorithm for the automatic collection of reviews and lexical and sentiment analyses.

3.3.1. Sentiment analysis

Sentiment analysis has been increasingly applied in recent years, especially to the contents of Web 2.0. Sentiment analysis measures the polarity and intensity of the mood of a person's opinion expressed in a text written in natural language.

Sentiment analysis methods can generally be divided into two categories: dictionary-based methods and methods based on supervised classification. The methods of the first category apply sentiment lexicons containing the semantic orientation of words to the sentences in the text. One of the biggest challenges of dictionary-based methods is that the sum of the semantic values of individual words does not necessarily correspond to the polarity of the entire sentence [46]. Therefore, it is necessary to extract further linguistic patterns of the text by conducting morphosyntactic analyses of the text [47]. However, too many specific extraction models limit the application of this method to a specific domain. The most recently applied second category of method uses unsupervised or supervised machine learning algorithms, such as machine learning-based methods and deep learning-based methods. These methods allow the development of more generic models but require data classified according to specific categories. Consequently, the quality of these models is strongly influenced by the reliability of the training and testing sets performed by human classifiers [48].

The literature reveals that there is no superior sentiment analysis method because all tools work differently depending on the specific context in which they are applied or based on the corresponding data source on which they were trained. One of the best sentiment analysis methods for analyzing poorly structured and simple texts, such as reviews in TripAdvisor, is AFINN [49]. AFINN [50] is a dictionary-based method that was initially created in 2009 for tweets downloaded for online sentiment analysis in relation to the United Nations Climate Conference (COP15). It has since been extended to other data domains. The version called AFINN-96 adopted in this work has 2,477 words and uses a score ranging from -5 (very negative) to +5 (very positive).

The sentiment scoring procedure is as follows:

1. Each review is broken down into its sentences $d_i = \{s_{i,1}, s_{i,2}, \dots, s_{i,n}\}$ based on punctuation; subsequently, each sentence is broken down into words (w) $s_{i,j} = \{w_{i,j,1}, w_{i,j,2}, \dots, w_{i,j,b}\}$ using a semantic annotation pro-

cedure (Kiyavitskaya et al., 2006).

2. The words in each sentence, $\{w_{i,j,k}\}$, are searched and compared with the lexicon of polarized words, and each of them is assigned a negative or positive score. Not all words have a sentiment score; therefore, we obtain a subset of polarized words $\{pw_{i,j,k}\} \subseteq \{w_{i,j,k}\}$.

3. Finally, we sum the weighted context yielding an unbounded polarity score $\delta_{i,j}$ for each sentence.

We chose not to normalize the polarity score on the number of words because satisfaction or dissatisfaction with service quality is proportional to the number of positively or negatively polarized words used to write a review [49].

3.3.2. Co-occurrence network of high-frequency words

To extract useful information from the subreviews to understand the reasons for the quality and failure of the service, we used the co-occurrence graph method of the highest-frequency words. The first step of the analysis was the preprocessing of the sets of subreviews, called corpora. We carried out the following steps:

- (i) Tokenization of the text that involves division into words of the text itself;
- (ii) Removal of stopwords defined as words that do not carry significant information for analysis;
- (iii) Stemming and rooting, which consist of reducing words to the root;
- (iv) Removal of extra numbers and spaces;
- (v) Removal of punctuations;
- (vi) Part-of-speech tagging aimed to assign parts of speech to each word of a given text (such as nouns, verbs, adjectives, and others) based on its definition and context.

The co-occurrence network of the higher-frequency words was performed using the KH Coder software. We only used nouns and adjectives, as they are parts of speech with the highest information content [51], [52]. In the analysis, we took 50 words with the highest frequency in the review corpora of each of the five wine regions. The KH Coder provides choices of Jaccard, cosine, or Euclid for measuring the distance between terms; in this research, the distance cosine was chosen. To facilitate the reading of the results, the procedure applied the methods developed by Fruchterman and Reingold [53] and by T. Kamada and S. Kawai [54] to design the word-word network.

Community analysis is one of the most recent developments in network theory. A network has a community structure when it is possible to partition it into subnets (also called communities, subgraphs, or clusters) characterized by a density of internal connections (i.e., between

elements of the community itself) much greater than the density of connections between a community and the other community. Typically, in a network where there is a community structure, there are groups of highly connected nodes, nodes that are isolated, and others that act as a bridge between the different communities. To identify the subgraphs, we used the modularity method for its computational efficiency [55], [56].

3.3. Reviews processing

A flowchart of our procedure is shown in Figure 1. The procedure was divided into the following steps:

Step 1 (orange in Figure 1). In the first phase, we harvested the data relating to reviews based on the TripAdvisor URL of the five wine regions. For this purpose, we wrote a procedure in R language based on the “rvest” library (available as supplementary material). The data collected were the title of the review, review, and evaluation of the bubbles. The database obtained was divided into two subsets: positive reviews (PR) with a rating greater than three bubbles and neutral or negative reviews (NNR) with a rating less than or equal to three bubbles.

Step 2 (green in Figure 1). The reviews were divided into individual sentences. A sentence is the smallest lexical unit in natural language processing and is defined as a grammatical unit of one or more words that expresses an independent statement. A sentiment analysis procedure was applied to the sentences to assess the polarity (positive or negative) and the relative sentiment score of the perception of service quality or failure. Sentences with positive polarity express service quality, whereas those with negative polarity express service failure. In the subset of S_PR, only sentences with a sentiment score greater than zero were selected, while in S_NNR, only sentences with a sentiment score less than zero were selected. Finally, the sentences belonging to the same review were merged to obtain two sub-reviews, one with only the positive sentences and the other with only the negative sentences. Thus, we obtained two datasets: service quality subreviews (SQRs) and service failure subreviews (SFRs) for the five wine regions. In this study, sentiment analysis was conducted using the “syuzhet” library of R software.

Step 3 (cyan in Figure 1). The co-occurrence graph method is one of the most widely used methods for analyzing large databases of unstructured text from social media [57] [58]. The analysis of the co-occurrence network of words allows us to draw a network of relationships between words with a high degree of co-occurrence. This analysis allowed us to extract the most fre-

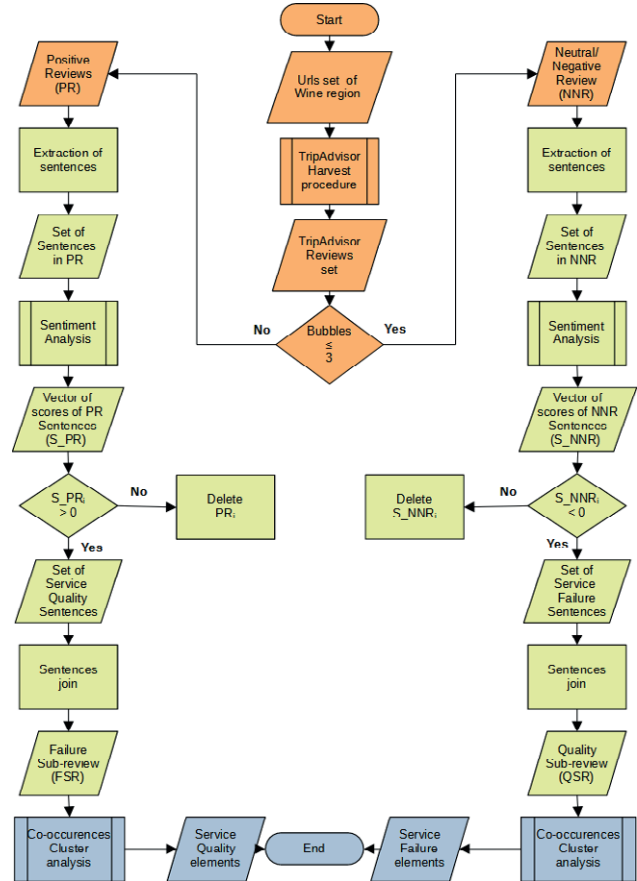


Figure 1. Flow chart of the proposed methodology.

quently recurring concepts for both service quality and service failure. A co-occurrence network of high-frequency words procedure was applied to the SQRs and SFRs to identify the factors and causes of service quality and service failure during the visits to cellars. The elaborations were carried out using the KH Coder 3 software.

4. RESULTS

4.1 TripAdvisor ranking and sentiment analysis

We downloaded reviews and rankings of five wine regions collected in the period from January 2010 to April 2021 for a total of 89,672 reviews of 1,074 wineries. The wine region with the most reviews was Napa Valley with 46,753 reviews related to 387 wineries, followed by Hunter Valley with 13,204 reviews of 118 companies, Stellenbosch with 8,232 reviews of 81 companies, Tuscany with 7,402 reviews of 414 wineries, and Mendoza with 3,581 reviews related to 74 wineries. To understand how users rated their winery experience on TripAdvisor,

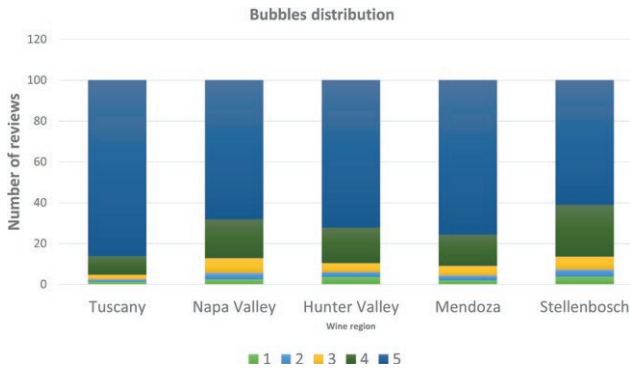


Figure 2. Distribution of bubbles ranking.

we analyzed the percentage distribution of the bubbles' scores (Figure 2).

The figure shows that, in general terms, positive evaluations with five bubbles prevail. In particular, Tuscany had the highest percentage of reviews valued at five bubbles (86%), followed by Mendoza (76%), Hunter Valley (72%), Napa Valley (68%), and Stellenbosch (61%). The four bubbles score was highest in Stellenbosch (25%), followed by Napa Valley (19%), Hunter Valley (17%), Mendoza (15%), and Tuscany (9%). The neutral score of the three bubbles was the same for Stellenbosch and Napa Valley (7%) and lower for Mendoza (5%), Hunter Valley (4%), and Tuscany (2%). Finally, two and one bubbles occurred at very low percentages in all five regions.

Table 1 reports the results of the sentiment analysis for the subreviews that express service quality (bubbles > 3 and sentiment > 0) and the subreviews related to service failure (bubbles ≤ 3 and sentiment < 0). For bubbles, the region with the highest perceived sentiment for service quality was Tuscany, followed by Mendoza, Napa Valley, Stellenbosch, and Hunter Valley. To validate the differences between the means, we performed a pairwise analysis with the van der Waerden test with the correction of the p-values according to the Bonferroni method. The advantage of the van der Waerden test is that it obtains a high efficiency of the standard ANOVA when the assumptions of normality are satisfied, but it also provides the robustness of the Kruskal-Wallis test when the assumptions of normality are not satisfied. The results reported in Table 1 show that the differences between the sentiment score of Tuscany compared to the other four wine regions and between the sentiment score of Mendoza compared to the other four regions are statistically significant. The differences between Stellenbosch, Napa Valley, and Hunter Valley are not significant.

For service failure, the region with the highest level of perceived sentiment was Napa Valley, followed by

Table 1. Statistics, mean, and standard deviation of the sentiment analysis of service quality and service failure.

	Hunter Valley	Mendoza	Napa Valley	Stellenbosch	Tuscany
Service quality					
n	11304	3063	38298	6763	16431
mean	13.07	14.29	13.64	13.85	15.13
sd	6.39	7.32	6.99	7.03	7.70
Pairwise comparisons using van der Waerden normal scores test					
	Hunter Valley	Mendoza	Napa Valley	Stellenbosch	Tuscany
Mendoza	7.3E-14 ***	-	-	-	-
Napa Valley	6.9E-10 ***	2.3E-5 ***	-	-	-
Stellenbosch	9.8E-10 ***	0.067 *	0.246	-	-
Tuscany	< 2e-16 ***	8.4E-08 ***	< 2e-16 ***	< 2e-16 ***	-
Service failure					
n	871	190	3269	693	519
mean	-5.31	-5.08	-3.97	-4.84	-4.36
sd	4.29	4.14	3.40	4.06	3.42
Pairwise comparisons using van der Waerden normal scores test					
	Hunter Valley	Mendoza	Napa Valley	Stellenbosch	Tuscany
Mendoza	1.000	-	-	-	-
Napa Valley	< 2e-16 ***	8.3E-04 ***	-	-	-
Stellenbosch	0.108	1.000	0.000	-	-
Tuscany	9.9E-05 ***	0.619	0.042	0.469	-

Tuscany, Stellenbosch, Mendoza, and Hunter Valley. The pairwise analysis shows that the perceived sentiment in the Napa Valley region was significantly higher than that in Stellenbosch, Hunter Valley, and Mendoza regions, but not significantly higher than that of Tuscany region. Tuscany, in turn, had a statistically significant difference compared only to Hunter Valley, while the difference with Mendoza and Stellenbosch was not significant. Finally, the perceived sentiment differences between Mendoza, Hunter Valley, and Stellenbosch were not statistically significant.

4.2 Co-occurrence network of service quality

The co-occurrence network and cluster analysis, based on databases with positive sentiment according to the AFINN dictionary (AFINN > 0) and positive bubble rankings (bubbles > 3), highlight the elements that characterize the service quality of the wineries in various wine regions, and how they are perceived by the different types of users.

The analysis was carried out separately for each wine region (Figures A.1-A.5 in the Appendix), with both datasets resulting from the union of all regions (Figure 3).

In general terms (Figure 3), the analysis identifies seven prevalent themes of service quality: “wine,” which characterizes subgraph 1 in Figure 3; “tour,” subgraph 4; “tasting,” subgraph 5; “winery,” subgraph 3; “service,” subgraph 2; “view,” subgraph 6; and “staff,” subgraph 7.

The wine theme

The core product, wine, is central to the perception of service quality both in the global analysis and sepa-

However, in the Mendoza graph, the theme is articulated in a much more complex way. The “excellent” experience in the “tasting” – “room” is associated with the “tour,” with “guides” defined as “interesting” and “informative.” The location of the theme is then specified: “family” – “small” – “winery.”

The tour theme

The “tour” theme is present as a subgraph in the graphs of Napa Valley and Tuscany. In the Hunter Valley graph, it is part of the “wine” theme, and in the Mendoza graph, it is part of the “tasting” theme. It is not present in the Stellenbosch graph. In Tuscany, “tour” is associated with the theme of “lunch” and is defined as “informative” and “interesting.” In the Napa Valley graph, the tour theme “tour” is associated with the typical “cave” theme. The history of wine cave construction in the United States dates back to the 1860s in Sonoma and the 1870s in the Napa Valley region. In 1982, the Far Niente winery completed the first “new age” wine cave in Napa Valley. The Far Niente Winery caves now comprise approximately 3,700 m² [59].

The service theme

The service theme is presented as a subgraph in the Hunter Valley and Napa Valley graphs. In the Mendoza graph, it is connected to the subgraph “wine.” It is not present in the graphs of Stellenbosch or Tuscany.

In the global graph, it is linked to the terms “great” and “time.” Hunter Valley associates the adjective “excellent” with “service” and in the Napa Valley graph with “great” – “time.”

The view theme

The “view” theme is present in the graphs of Stellenbosch, Napa, and Tuscany. In the global graph, as well as in the Napa Valley graph, it is associated with “beautiful” and “ground.” It is associated with “amazing” and “stunning” in the graph of Stellenbosch and with “amazing” and “beautiful” in that of Tuscany.

The regional themes of food and restaurant

The theme of food is not present in the global graph (either as a subgraph or as a high-frequency word). The theme features subgraphs in the graphs of Hunter Valley, Mendoza, Tuscany, and Stellenbosch. In Mendoza, the subgraph is highly articulated and includes the themes of the “course” and the “pairing” of wine with “food.” In Hunter Valley, “food” is simply associated with “lunch.” In the other two regions, the term food does not appear specifically but refers to gastronomic specialties, such as “olive” “oil” in Tuscany; “platter” of “cheese” and “wine” and “chocolate” “pairing” in Stellenbosch.

4.3 Co-occurrence network of quality failure

The co-occurrence network and cluster analysis, based on a database with negative sentiment according to the AFINN dictionary (AFINN < 0) and negative bubble ranking (bubbles < = 3), highlights the elements that characterize the failure of winery services in various wine regions and the problems experienced and encountered by consumers. Similar to the previous case, the analysis was carried out both globally (Figure 4) and separately for each wine region (Figure A.6- Figure A.10 in the appendix), using only the most frequently used nouns and adjectives for a maximum number of 50 words.

The global graph includes six subgraphs: “wine” (subgraph 2), “tasting” (subgraph 3), “tour” (subgraph 1), “staff” (subgraph 4), “service” (subgraph 5), and “disappointing” (subgraph 6).

The wine theme

The wine theme is present in all the wine regions. Globally, the graph is not very articulated; “wine” is associated with the nouns “bottle,” “place,” “glass,” “price,” and with the bigram “drop” – “day.” However, in the graphs of the individual regions, the theme is more articulated and diversified. In the Mendoza graph (Figure A.7), “wine” is frequently associated with “tasting” – “price” and “staff”- “worst”- “day” - “tour.” In the Napa Valley graph (Figure A.8), we have a high frequency of co-occurrence for “bad” – “experience” in “winery” – “tasting” – “room.” The Stellenbosch graph (Figure A.9) highlights a “disappointing” – “wine” – “tasting” – “experience,” with also references to the “price.” Even the graph of Tuscany reports “disappointing”-“wine” – “tasting” (Figure A.10). In the case of Hunter Valley (Figure A.6), we have a graph more similar to the global one in which “wine” is directly associated with “tasting,” “place,” and “glass.”

The tasting theme

The tasting theme is present only in the global graph, but highlights a rather debated problem [60], [61]: whether or not to charge a “tasting” – “fee” at your cellar door.

The tour theme

The tour theme is presented as a subgraph in the Hunter Valley, Napa Valley, and Tuscany graphs. It is associated with the wine theme in the Mendoza graph. It is not present in the 50 most frequent words in the Stellenbosch graph. In the global graph, the “tours” in the cellars, “winery” and vineyards, “vineyards” cause “disappointment” for the “worst” - “guide,” the loss of “time,” and “money.”

referring to the term “restaurant” to form an independent cluster. In Mendoza, the theme “restaurants” is associated with terms like “food,” “lunch,” and the bigram “terrible experience.” In Hunter Valley and Stellenbosch, tourists refer specifically to winery restaurants.

5. DISCUSSION

Previous research [61], [46] has shown that TripAdvisor reviews have inconsistencies regarding the overall experience rating through the bubbles method. Very often, high-rated reviews also have reports of low quality of service, and low-rated reviews also report positive aspects of an experience. This feature can lead to inefficiencies in the application of natural language processing procedures to identify service quality and failures. Our methodology combines sentiment analysis and natural language processing procedures and has allowed us to break down each review by isolating positive sentences (service quality subreview) and negative sentences (service failure subreview) by assigning them a scalar score (RQ1). We have applied our procedure to the reviews of visits to wineries in the five regions with the greatest development of the wine tourism sector in the world: Hunter Valley, Mendoza, Stellenbosch, Napa Valley, and Tuscany. The results showed that the five wine regions have very high levels of perceived quality, with an average sentiment score ranging from a minimum of 13 (Hunter Valley) to a maximum of 15 (Tuscany). In comparison, the sentiment scores of service failure are much lower in absolute values: from a minimum of -5.3 (Hunter Valley) to a maximum of -3.9 (Napa Valley). The pairwise multiple comparison of means allows for a ranking with significant differences for the first and last places. In the case of negative reviews, the values are decidedly lower, and the differences between the averages are not significant. These results are plausible, as we are dealing with regions specialized in wine tourism and, therefore, with an organization of complementary services for wine tasting (wine routes, festivals, events, etc.) that are substantially similar. Even the highest level of perception of quality in the case of Tuscany could be due to synergy with the landscape and historical locations. However, these hypotheses will have to be verified through specific investigations.

The results we obtained in identifying the themes of service quality and service failure are consistent and extend to the knowledge of previous research (RQ2 and RQ3).

The graphs of the results of co-occurrence (Figures 3, 1A-5A) assess the perception of the attributes of

winescapes proposed by Thomas et al. [22]: winescape setting, winescape atmospherics, wine product, complementary product, winescape signage, winescape layout, and winescape service staff attributes. The “wine product” is certainly the most frequently perceived attribute in the evaluation of the quality of a visit to a cellar, and in the tasting experience, it is connected through the tasting room to the perception of the winescape atmospherics. The guided tour is the third most-cited theme in positive reviews. This theme is not present among the winescape attributes identified by the authors, and therefore constitutes a new additional attribute. In the global graph, themes refer to the winescape setting attribute (“beautiful-view”) and the winescape service staff attribute (“customer” and “staff”). Finally, according to our results, complementary product attributes are not present in the global graph but appear in the graphs of all wine tourism regions with different denominations (see: Figures A.1-A.5).

The analysis of service failure (RQ3) is another original result of our study, as this topic has thus far been neglected in the literature. Despite the fact that reviews related to service failure are less (under 10%), evidence suggests that customers are more likely to remember service failures than excellent service [62]. The advent of social media has dramatically changed the way customers convey word-of-mouth information. Previously, customers shared experiences in person with a limited number of social contacts; however, currently, social networking sites allow them to share their experiences with more people [63]. As such, word-of-mouth communication influences network members’ product and service choices [64]. In particular, negative word-of-mouth communication can adversely influence customers’ attitudes and purchase intentions and a company’s brand image [65], [66] and [67].

Thus, to ensure that quality is perceived in services and that critical episodes of service excellence are remembered better than defects, a comprehensive understanding of service failure processes is necessary.

The themes we identified were similar to those of service quality but expressed with useful information for stakeholders. In the graph of service quality, the staff theme is associated with the dimension of responsiveness for the adjective “knowledgeable” and with the dimension of empathy for the adjective “friendly”; in the service failure graph, instead, there is only the dimension of empathy with the negative adjective “rude” and there are no negative perceptions for responsiveness. This allows us to identify a critical issue and find out the best way to resolve it. The tour theme is also very different in the service failure graph compared to the service

quality graph. The criticalities that emerge are logistical and indicate a waste of time or lack of professionalism by the guide.

We can answer RQ4 by comparing the global graph with those of the five wine regions. Looking at Figures A.1-A.5, we find many similarities, but also some peculiarities. For the quality of service, six or seven themes are calculated for each chart. The themes "wine and tasting" and "personnel" are present in all the graphs and, therefore, represent elements perceived worldwide. Even "view" is another attribute of service quality on a global significance because it is present in four regions as the theme, and Hunter Valley is a word related to the theme "wine." Regarding peculiarities, Tuscany, and especially Stellenbosch, are characterized by the complementarity between wine and food, and Mendoza, Napa Valley, and Tuscany by the presence of organized tours.

In service failure, the differences between the global graph and those of the wine regions are more marked. The global graph identifies six themes, while in the regions, we find a minimum of seven (Napa Valley) to a maximum of 10 (Mendoza) themes. The only themes common to all the graphs are "wine" and "staff", while the tasting theme is always present as a linked word in the regional graphs. Tour failure is a common weakness only in Napa Valley and Tuscany, while many graphs highlight critical issues for the restaurant-food theme.

6. CONCLUSION

6.1. Theoretical implications

Our study proposed a model for analyzing the quality and failure of service in wine tourism and winery visits. It has filled a gap in wine tourism studies by adopting an approach based on the combination of sentiment analysis and natural language processing, as well as a global geographic perspective that has not been applied thus far. Our methodology, comparing five different wine tourism regions around the world, has allowed us to overcome the limitations highlighted by many researchers relating to the poor generalizability of results obtained by questionnaires [5], [26], [6], [28], [17].

6.2. Practical implications

The results obtained confirm and extend the findings of previous studies and are useful to both professionals (wineries, tour operators, and travel agents) and in the design of a product that meets the needs of wine tourists.

Analyzing well-developed wine regions for service quality helps to gain a comprehensive view of service

quality, which could be useful for emerging wine regions that are just beginning to develop wine tourism services.

The results highlight the most important dimensions of wine tourism experience. In promoting new regions, entrepreneurs should emphasize the beauty of the wine landscape; they should take care of the settings of wineries and tasting rooms, as well as of historical villages, the quality of the enogastronomical offer, and the possibility of obtaining information from the winemakers of wineries.

Moreover, the results show the need to train operators in aspects relating to enology and psychology to effectively manage winery visits.

Finally, operators should use electronic word-of-mouth data to monitor tours' perceptions and thus continually improve service design and promptly resolve problems that create inefficiencies.

6.2. Limitations and future research

The main limitation of the study relates to the application of the methodology to the five most developed wine regions in the world. This choice made it possible to identify the fundamental themes of service quality, but the results obtained may not be immediately applicable to wine regions that are starting to develop wine tourism. Therefore, additional research will be needed in future to monitor the evolution of reviews in new wine tourism regions over time. Other limitations are common to research that is based on social media data: the results are based on the opinions of only those consumers who use TripAdvisor and, therefore, could be biased. The demographic and psychological data of the reviewers is also missing from the study.

REFERENCES

- [1] Hall, C. M., Johnson, G., & Mitchell, R. (2009). Wine tourism and regional development. In *Wine Tourism around the World* (pp. 196-225). Routledge.
- [2] Alant, K., & Bruwer, J. (2004). Wine tourism behaviour in the context of a motivational framework for wine regions and cellar doors. *Journal of Wine Research*, 15(1), 27-37. <https://doi.org/10.1080/0957126042000300308>.
- [3] Menghini, S. (2015). The new market challenges and the strategies of the wine companies. *Wine Economics and Policy*, 4(2), 75-77. <https://doi.org/10.1016/j.wep.2015.11.003>.
- [4] Charters, S., & O'Neill, M. (2001). Service Quality at the cellar door: A comparison between regions.

- International Journal of Wine Marketing, 13(3), 7-17. <https://doi.org/10.1108/eb008723>.
- [5] O'Neill, M., Palmer, A., & Charters, S. (2002). Wine production as a service experience—the effects of service quality on wine sales. *Journal of Services Marketing*, 16(4), 342-362. <https://doi.org/10.1108/08876040210433239>.
- [6] Gill, D., Byslma, B., & Ouschan, R. (2007). Customer perceived value in a cellar door visit: The impact on behavioural intentions. *International Journal of Wine Business Research*, 19(4), 257-275. <https://doi.org/10.1108/17511060710837418>.
- [7] Carlsen, J. (2011). Assessing service quality at wineries and cellar doors through service mapping. *International Journal of Wine Business Research*, 23(3), 271-290. <https://doi.org/10.1108/17511061111163087>.
- [8] Taylor, R. (2006), Chapter 14. "Wine festivals and tourism - Developing a longitudinal approach to festival evaluation". In *Global Wine Tourism. Research, Management and Marketing* J. Carlsen and Charters, S. (Eds). CABI, Wallingford.
- [9] Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1994). Reassessment of expectations as a comparison standard in measuring service quality: Implications for further research. *Journal of Marketing*, 58(1), 111-124. <https://doi.org/10.1177/002224299405800109>.
- [10] Haverila, M., Haverila, K., & Twyford, J. C. (2021). Identification of key variables and constructs in the context of wine tasting room: Importance-performance analysis. *International Journal of Wine Business Research*, 33(1), 80-101.
- [11] Magnini, V. P., & Ford, J. B. (2004). Service failure recovery in China. *International Journal of Contemporary Hospitality Management*, 16(5), 279-286. <https://doi.org/10.1108/09596110410540249>.
- [12] Giglio, S., Pantano, E., Bilotta, E., & Melewar, T. C. (2020). Branding luxury hotels: Evidence from the analysis of consumers' "big" visual data on TripAdvisor. *Journal of Business Research*, 119, 495-501. <https://doi.org/10.1016/j.jbusres.2019.10.053>.
- [13] Sann, R., & Lai, P. C. (2020). Understanding homophily of service failure within the hotel guest cycle: Applying NLP-aspect-based sentiment analysis to the hospitality industry. *International Journal of Hospitality Management*, 91. <https://doi.org/10.1016/j.ijhm.2020.102678>, 102678.
- [14] Carlsen, P. J. (2004). A review of global wine tourism research. *Journal of Wine Research*, 15(1), 5-13. <https://doi.org/10.1080/0957126042000300281>.
- [15] Mitchell, R., & Hall, C. M. (2006). Wine tourism research: The state of play. *Tourism Review International*, 9(4), 307-332.
- [16] Brown, G. P., Havitz, M. E., & Getz, D. (2007). Relationship between wine involvement and wine-related travel. *Journal of Travel and Tourism Marketing*, 21(1), 31-46.
- [17] Gómez, M., Pratt, M. A., & Molina, A. (2019). Wine tourism research: A systematic review of 20 vintages from 1995 to 2014. *Current Issues in Tourism*, 22(18), 2211-2249. <https://doi.org/10.1080/13683500.2018.1441267>.
- [18] Peters, G. L. (2018). *American Winescapes: The Cultural Landscapes of America's Wine Country*. Routledge.
- [19] Johnson, R., & Bruwer, J. (2007). Regional brand image and perceived wine quality: The consumer perspective. *International Journal of Wine Business Research*, 19(4), 276-297.
- [20] Quintal, V. A., Thomas, B., Huang, Y. A., & Phau, I. (2018). Wine tourists' perspectives of New World'winescapes: Australia, USA and China. In *Food, Wine and China* (pp. 238-252). Routledge.
- [21] Quintal, V. A., Thomas, B., Phau, I., & Soldat, Z. (2021). Segmenting hedonic wine tourists using push-pull Winescape attributes. *Australasian marketing Journal*, 1839334921999478.
- [22] Thomas, B., Quintal, V. A., & Phau, I. (2018). Wine tourist engagement with the winescape: Scale development and validation. *Journal of Hospitality and Tourism Research*, 42(5), 793-828.
- [23] Lewis, R. C., & Booms, H. (1983). "The Marketing Aspects of Service Quality". In Berry, L., Shostack, G. and Upah, G. (Eds), *Emerging Perspectives on Services Marketing* (pp. 99-107). American Marketing Association.
- [24] Sparks, B., & Fredline, L. (2007). Providing an explanation for service failure: Context, content, and customer responses. *Journal of Hospitality and Tourism Research*, 31(2), 241-260.
- [25] King, C., Morris, R., & Pollack, J. (1997). "The cellar door report: Margaret River region". Winery/tourism research for the Margaret River Wine Industry Association and The Augusta/Margaret River Tourism Association. Edith Cowan University, Bunbury.
- [26] Griffin, T. O. N. Y., & Loersch, A. (2006). The determinants of quality experiences in an emerging wine region. *Global wine tourism: Research. Management and Marketing*, 80-91. <https://doi.org/10.1079/9781845931704.0080>.
- [27] Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple

- item scale. *Journal of Retailing*, 77(2), 203-220. [https://doi.org/10.1016/S0022-4359\(01\)00041-0](https://doi.org/10.1016/S0022-4359(01)00041-0).
- [28] Petrick, J. F. (2002). Development of a multi-dimensional scale for measuring the perceived value of a service. *Journal of Leisure Research*, 34(2), 119-134. <https://doi.org/10.1080/00222216.2002.11949965>.
- [29] Nella, A., & Christou, E. (2014). Linking service quality at the cellar door with brand equity building. *Journal of Hospitality Marketing and Management*, 23(7), 699-721. <https://doi.org/10.1080/19368623.2014.891959>.
- [30] Lockshin, L., & Corsi, A. M. (2012). Consumer behaviour for wine 2.0: A review since 2003 and future directions. *Wine Economics and Policy*, 1(1), 2-23. <https://doi.org/10.1016/j.wep.2012.11.003>.
- [31] Thach, L. (2009). Wine 2.0 - The next phase of wine marketing? Exploring US winery adoption of wine 2.0 components. *Journal of Wine Research*, 20(2), 143-157. <https://doi.org/10.1080/09571260903169548>.
- [32] Claster, W. B., Caughron, M., & Sallis, P. J. (2010, November). Harvesting consumer opinion and wine knowledge off the social media grape vine utilizing artificial neural networks. In *Fourth UKSim European Symposium on Computer Modeling and Simulation 2010* (pp. 206-211). <https://doi.org/10.1109/EMS.2010.109>. IEEE.
- [33] Nicholls, J. (2012). Everyday, everywhere: Alcohol marketing and social media - Current trends. *Alcohol and Alcoholism*, 47(4), 486-493. <https://doi.org/10.1093/alcalc/ags043>.
- [34] Brochado, A., Troilo, M., Rodrigues, H., & Oliveira-Brochado, F. (2019). Dimensions of wine hotel experiences shared online. *International Journal of Wine Business Research*, 32(1), 59-77. <https://doi.org/10.1108/IJWBR-12-2018-0072>.
- [35] Brochado, A., Souto, J., & Brochado, F. (2020). Dimensions of sustainable tour experiences. *Journal of Quality Assurance in Hospitality and Tourism*, 1-24. <https://doi.org/10.1080/1528008X.2020.1827479>.
- [36] Terziyska, I., & Damyanova, R. (2020). Winescape through the lens of organized travel—a netnography study. *International Journal of Wine Business Research*, 32(4), 477-492. <https://doi.org/10.1108/IJWBR-09-2019-0050>.
- [37] Brochado, A., Stoleriu, O., & Lupu, C. (2021). Wine tourism: A multisensory experience. *Current Issues in Tourism*, 24(5), 597-615. <https://doi.org/10.1080/13683500.2019.1649373>.
- [38] Vo Thanh, T., & Kirova, V. (2018). Wine tourism experience: A netnography study. *Journal of Business Research*, 83, 30-37.
- [39] Orduña-Malea, E., Font-Julian, C. I., Ontalba-Ruipérez, J. A., & Compés-López, R. (2021). Masters of Wine on Twitter: Presence, activity, impact and community structure. *Wine Economics and Policy*, 10(1), 73-88. <https://doi.org/10.36253/wep-9055>.
- [40] Lignon-Darmaillac, S. (2014). *Œnotourisme, redécouverte des valeurs patrimoniales des vignobles historiques, développement des vignobles du nouveau-monde*. *Cultur: Revista de Cultura e Turismo*, 8(3), 30-46.
- [41] Compés Lopez, R., & Szolnoki, G. (2021). Culture and wine tourism. In *Sustainable and Innovative Wine Tourism Success Models from All around the World* (Cajamar Caja Rural (Ed.). Valencia, Spain.
- [42] Jones, M. F., Singh, N., & Hsiung, Y. (2015). Determining the critical success factors of the wine tourism region of Napa from a supply perspective. *International Journal of Tourism Research*, 17(3), 261-271.
- [43] Bruwer, J. (2003). South African wine routes: Some perspectives on the wine tourism industry's structural dimensions and wine tourism product. *Tourism Management*, 24(4), 423-435.
- [44] Ayeh, J. K., Au, N., & Law, R. (2013). 'Do we believe in TripAdvisor?' Examining credibility perceptions and online travelers' attitude toward using user-generated content. *Journal of Travel Research*, 52(4), 437-452. <https://doi.org/10.1177/0047287512475217>.
- [45] Valdivia, A., Hrabova, E., Chaturvedi, I., Luzón, M. V., Troiano, L., Cambria, E., & Herrera, F. (2019). Inconsistencies on TripAdvisor reviews: A unified index between users and Sentiment Analysis Methods. *Neurocomputing*, 353, 3-16.
- [46] Wilson, T., Wiebe, J., & Hoffmann, P. (2009). Recognizing contextual polarity: An exploration of features for phrase-level sentiment analysis. *Computational Linguistics*, 35(3), 399-433. <https://doi.org/10.1162/coli.08-012-R1-06-90>.
- [47] Clavel, C., & Callejas, Z. (2015). Sentiment analysis: From opinion mining to human-agent interaction. *IEEE Transactions on Affective Computing*, 7(1), 74-93. <https://doi.org/10.1109/TAFFC.2015.2444846>.
- [48] Ribeiro, F. N., Araújo, M., Gonçalves, P., André Gonçalves, M. A., & Benevenuto, F. (2016). Sentibench—a benchmark comparison of state-of-the-practice sentiment analysis methods. *EPJ Data Science*, 5(1), 1-29. <https://doi.org/10.1140/epjds/s13688-016-0085-1>.

- [49] Khanna, P., Mishra, S., Kumar, S., & Sinha, A. (2017). SENTIMENT ANALYSIS: An APPROACH TO OPINION MINING FROM Twitter DATA USING R. *International Journal of Advanced Research in Computer Science*, 8(8).
- [50] Nielsen, F. Å. (2011). A New ANEW: Evaluation of a Word List for Sentiment Analysis in Microblogs. *arXiv Preprint ArXiv:1103.2903*.
- [51] Hu, Y. H., Chen, Y. L., & Chou, H. L. (2017). Opinion mining from online hotel reviews—a text summarization approach. *Information Processing and Management*, 53(2), 436-449. <https://doi.org/10.1016/j.ipm.2016.12.002>.
- [52] Kobayashi, Y., Ito, R., & Saito, K. (2019). Quantitative analysis of research trends on α -lipoic acid by text mining. *Nutrition and Dietary Supplements*, 3(1).
- [53] Fruchterman, T. M. J., & Reingold, E. M. (1991). Graph drawing by force-directed placement. *Software: Practice and Experience*, 21(11), 1129-1164. <https://doi.org/10.1002/spe.4380211102>.
- [54] Kamada, T., & Kawai, S. (1989). An algorithm for drawing general undirected graphs. *Information Processing Letters*, 31(1), 7-15. [https://doi.org/10.1016/0020-0190\(89\)90102-6](https://doi.org/10.1016/0020-0190(89)90102-6).
- [55] Clauset, A., Newman, M. E., & Moore, C. (2004). Finding community structure in very large networks. *Physical Review. E, Statistical, Nonlinear, and Soft Matter Physics*, 70(6 Pt 2), 066111.
- [56] Newman, M. E. (2006). Modularity and community structure in networks. *Proceedings of the National Academy of Sciences of the United States of America*, 103(23), 8577-8582.
- [57] Liu, Y., Li, Y., & Li, W. (2019). Natural language processing approach for appraisal of passenger satisfaction and service quality of public transportation. *IET Intelligent Transport Systems*, 13(11), 1701-1707.
- [58] Niezgodá, A., & Nowacki, M. (2020). Experiencing nature: Physical activity, beauty and tension in Tatra national park - Analysis of TripAdvisor reviews. *Sustainability*, 12(2), 601.
- [59] Conaway, J. (2002). *Napa: the story of an American Eden*. Houghton Mifflin Harcourt.
- [60] Kolyesnikova, N., & Dodd, T. H. (2009). There is no such thing as a free wine tasting: The effect of a tasting fee on obligation to buy. *Journal of Travel and Tourism Marketing*, 26(8), 806-819.
- [61] McNamara, N., & Cassidy, F. (2015). Wine tasting: To charge or not to charge? *International Journal of Hospitality Management*, 49, 8-16.
- [62] Valdivia, A., Luzón, M. V., & Herrera, F. (2017). Sentiment analysis in TripAdvisor. *IEEE Intelligent Systems*, 32(4), 72-77.
- [63] Lin, H., Fan, W., & Chau, P. Y. K. (2014). Determinants of users' continuance of social networking sites: A self-regulation perspective. *Information and Management*, 51(5), 595-603.
- [64] Grégoire, Y., Salle, A., & Tripp, T. M. (2015). Managing social media crises with your customers: The good, the bad, and the ugly. *Business Horizons*, 58(2), 173-182.
- [65] Bambauer-Sachse, S., & Mangold, S. (2011). Brand equity dilution through negative online word-of-mouth communication. *Journal of Retailing and Consumer Services*, 18(1), 38-45.
- [66] Verhagen, T., Nauta, A., & Feldberg, F. (2013). Negative online word-of-mouth: Behavioral indicator or emotional release? *Computers in Human Behavior*, 29(4), 1430-1440.
- [67] Titz, K. (2001). The impact of people, process, and physical evidence on tourism, hospitality, and leisure service quality. *Service Quality Management in Hospitality, Tourism and Leisure*, 67-83.

APPENDIX A

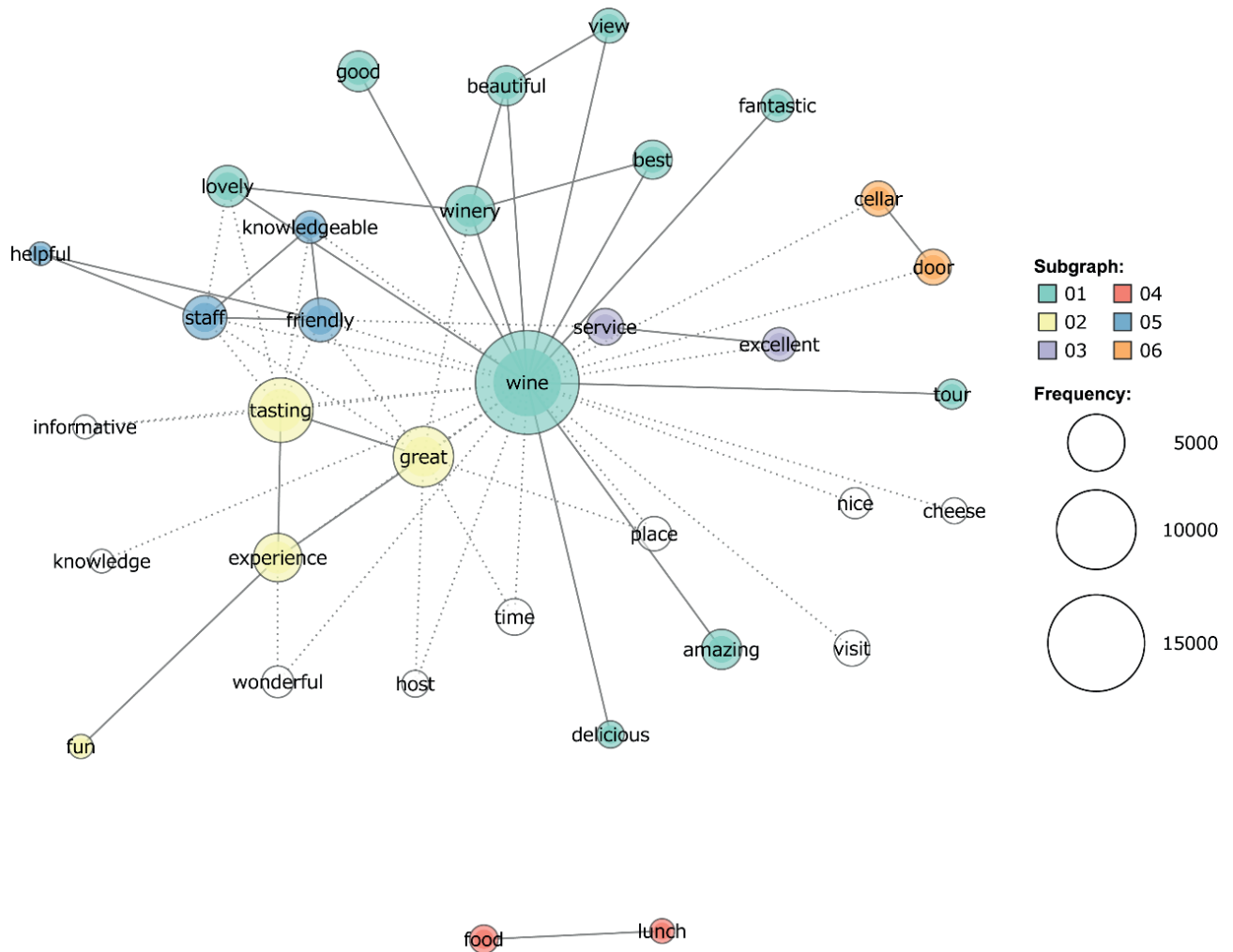


Figure A.1. Co-occurrence of service quality subreview for Hunter Valley region.

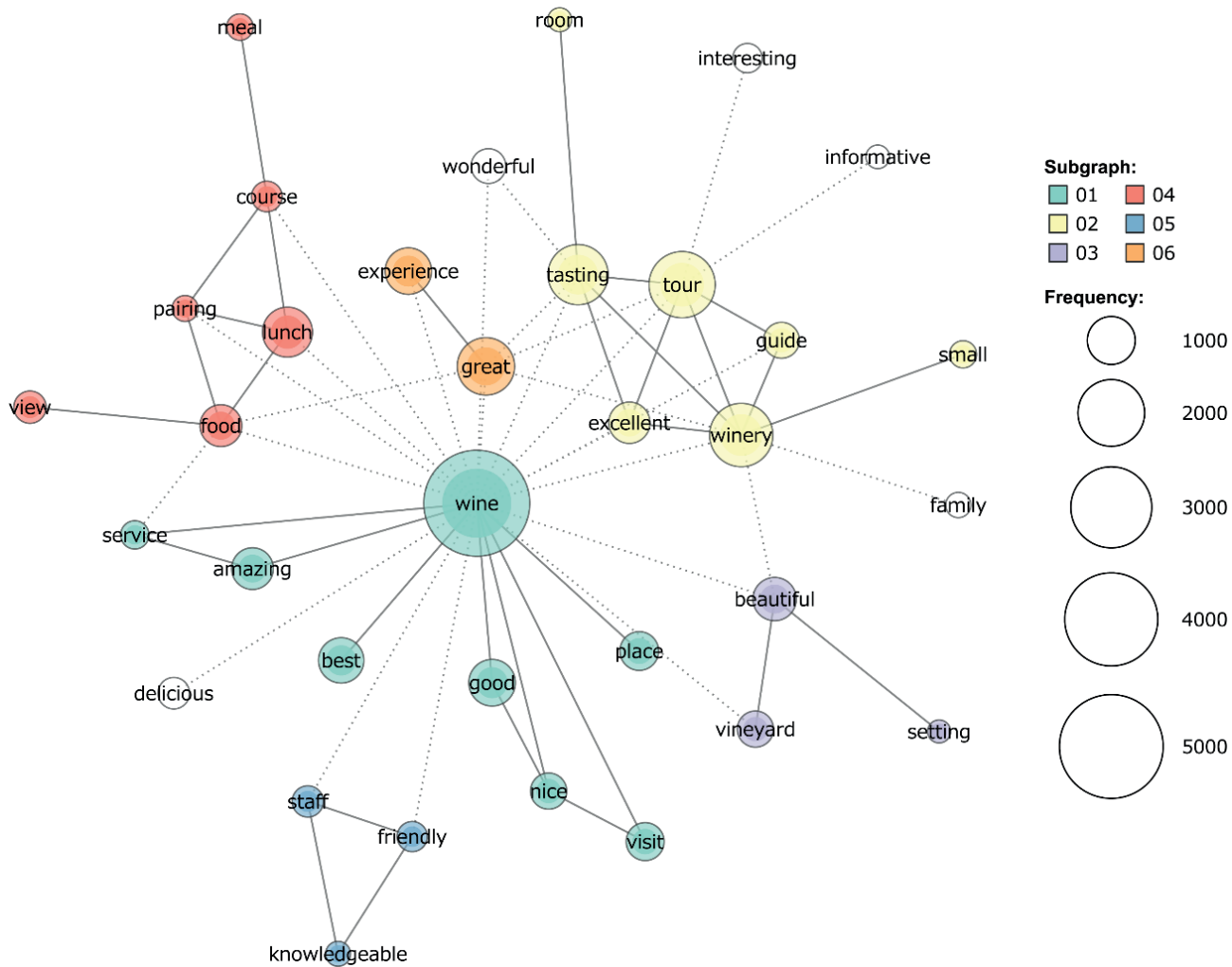


Figure A.2. Co-occurrence of service quality subreview for Mendoza region.

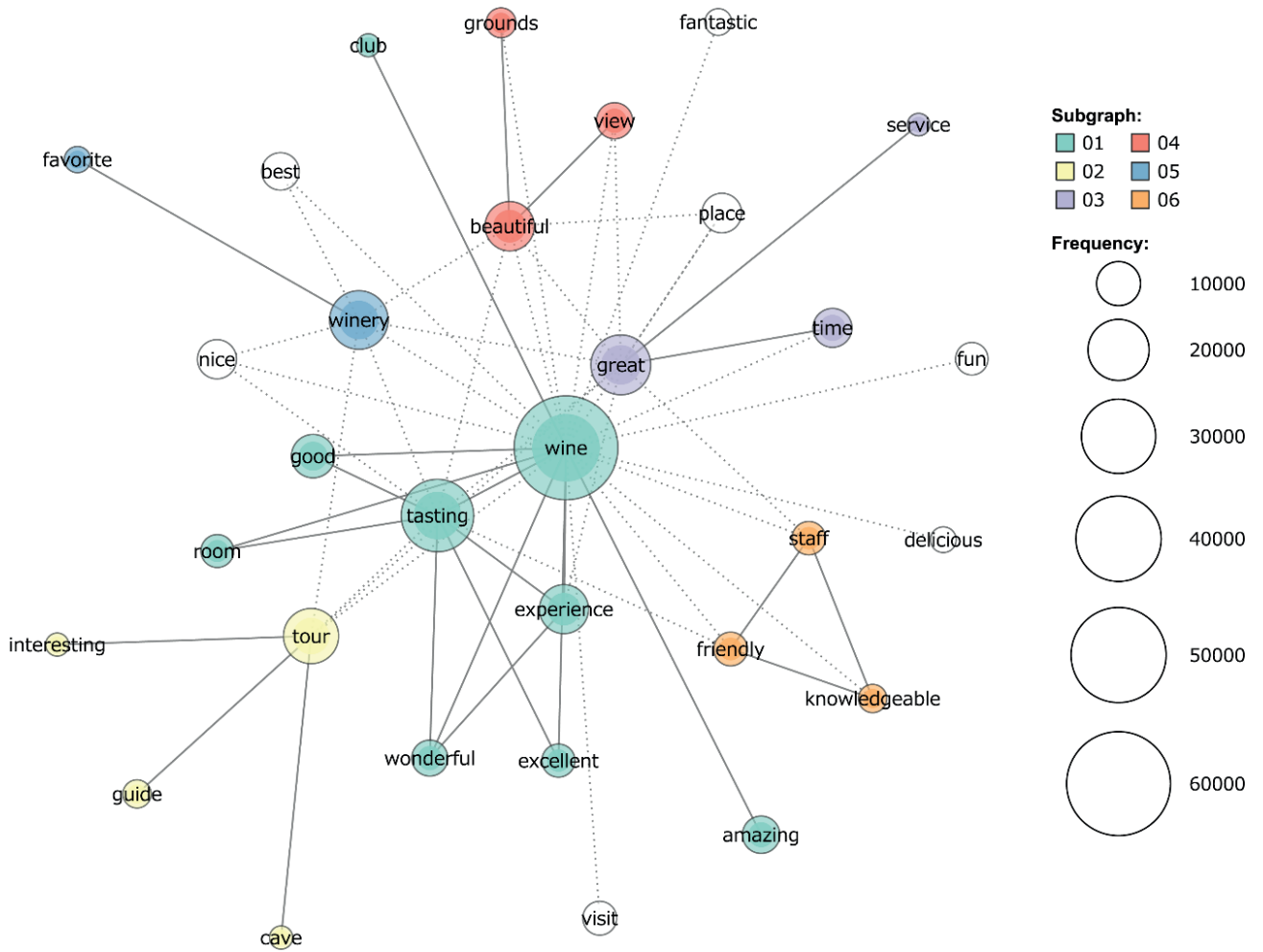


Figure A.3. Co-occurrence of service quality subreview for Napa Valley region.

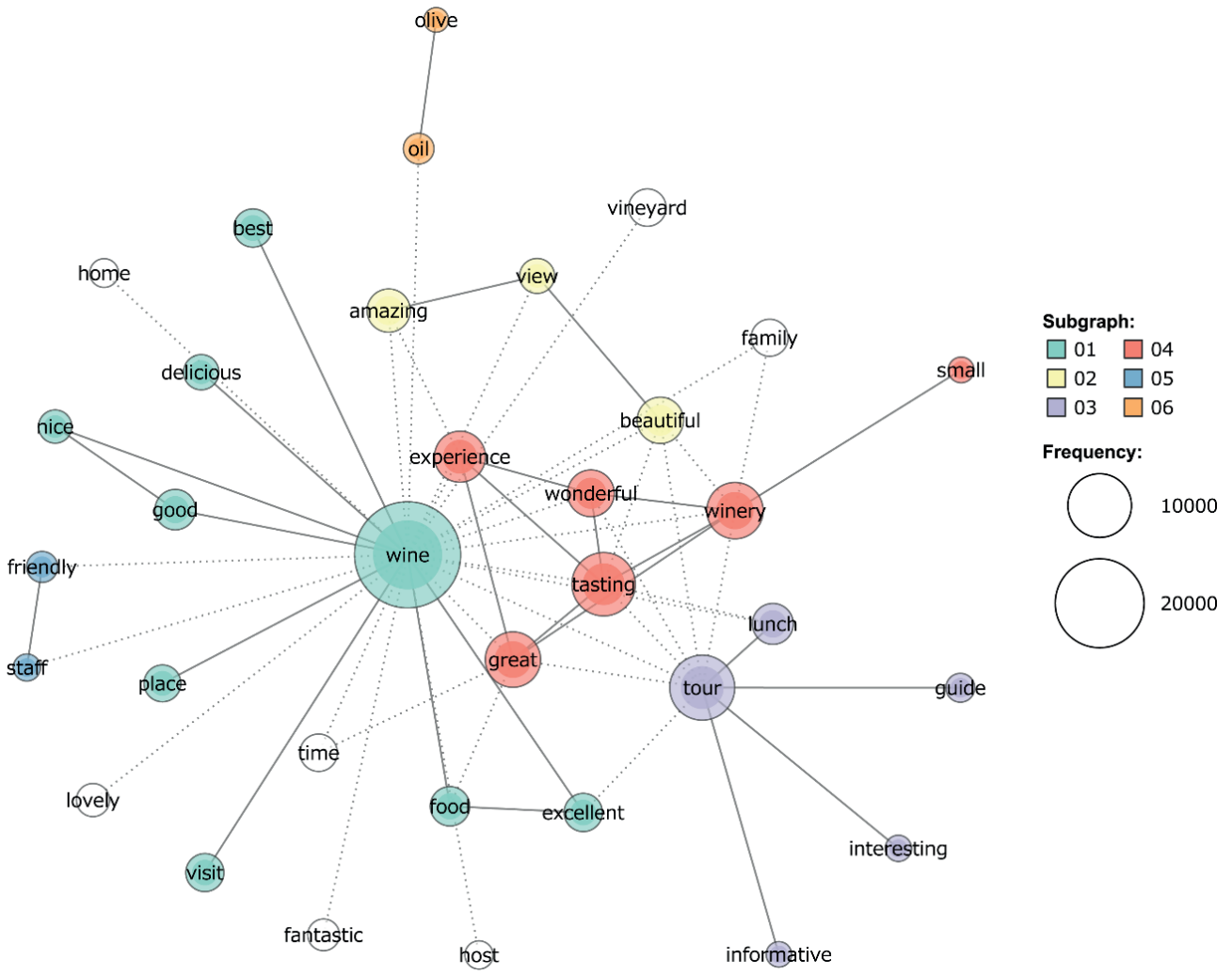


Figure A.4. Co-occurrence of service quality subreview for Stellenbosch region.

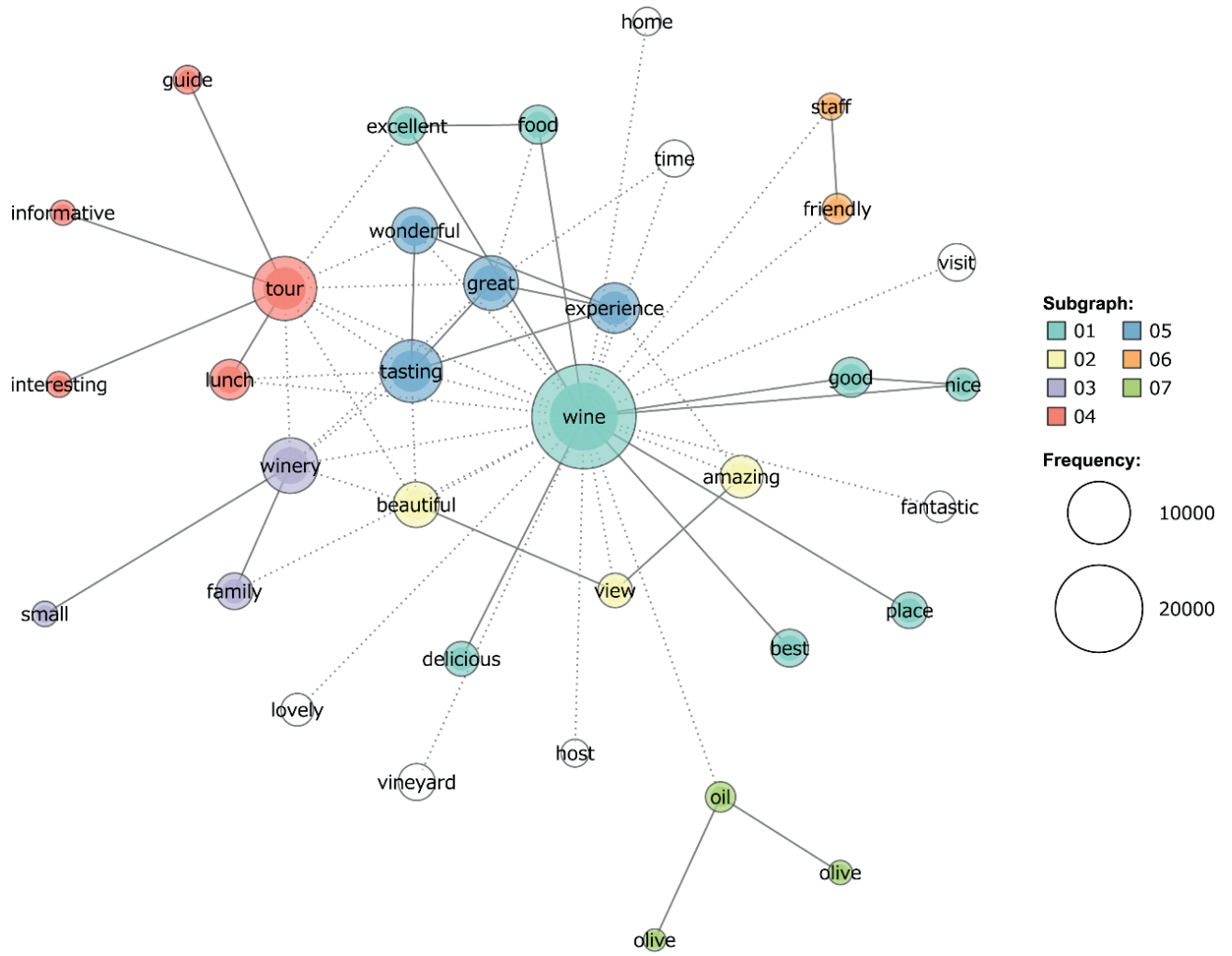


Figure A.5 Co-occurrence of service quality subreview for Tuscany region.

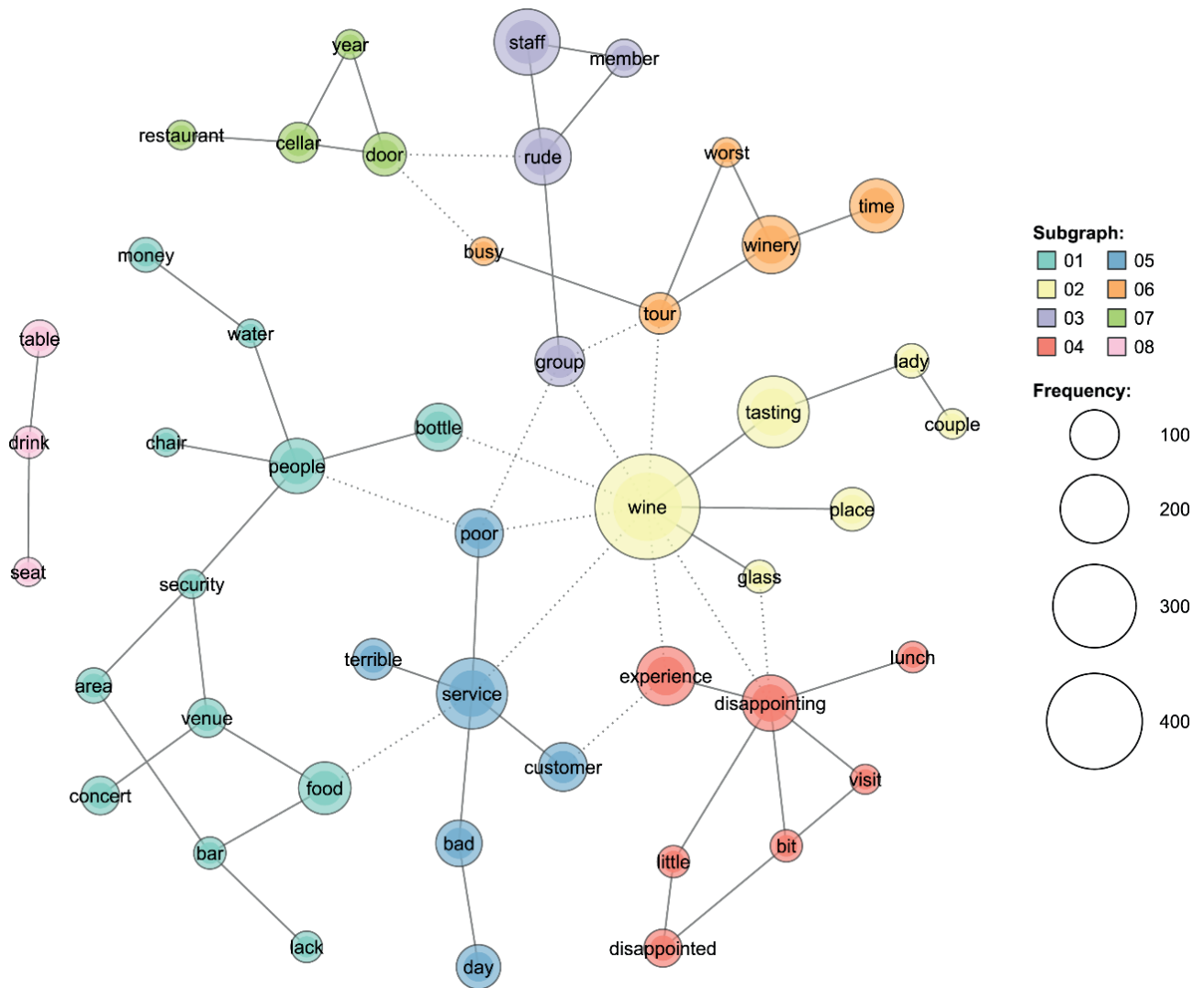


Figure A.6. Co-occurrence of service failure subreview for Hunter Valley region.

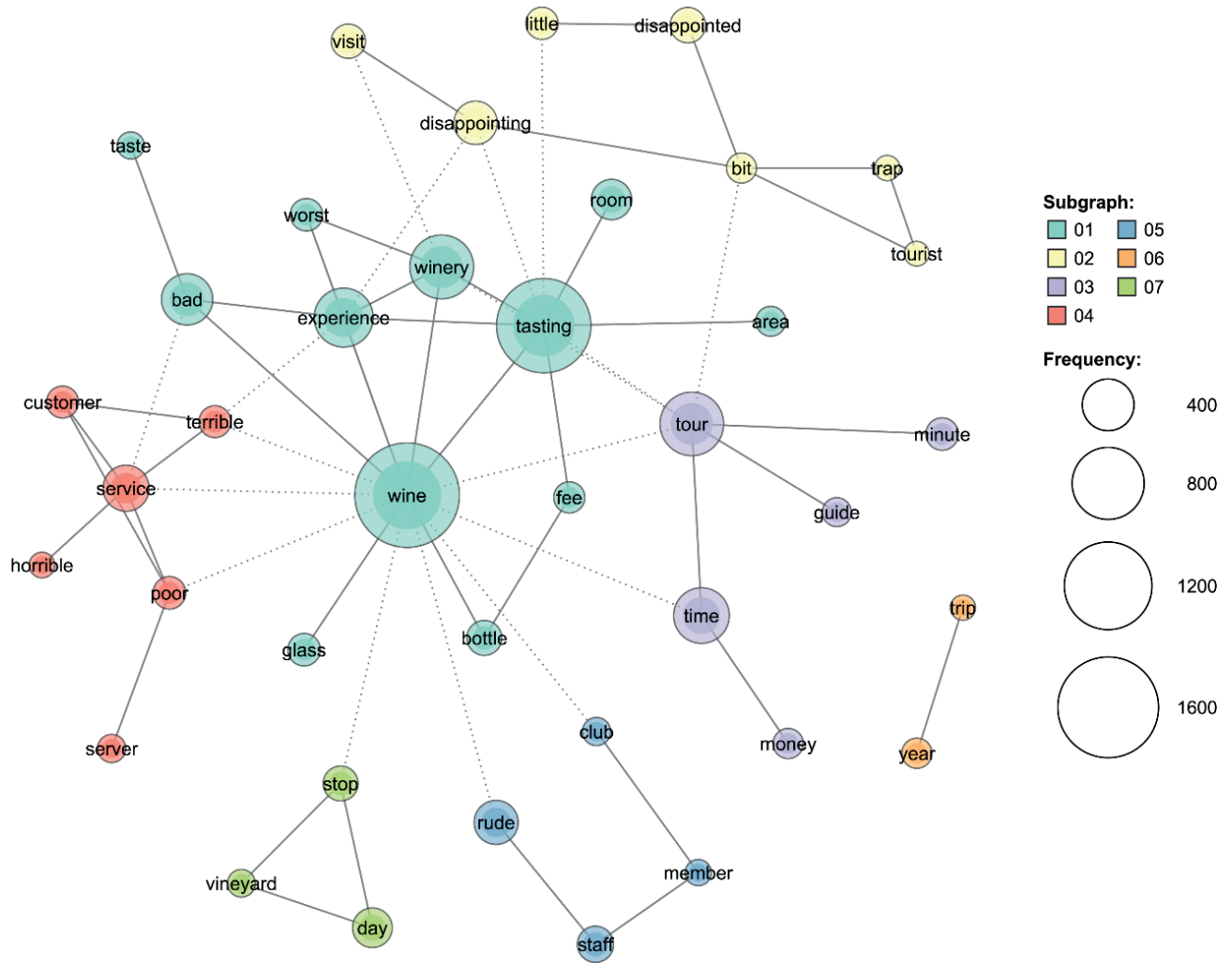


Figure A.8. Co-occurrence of service failure subreview for Napa Valley region.

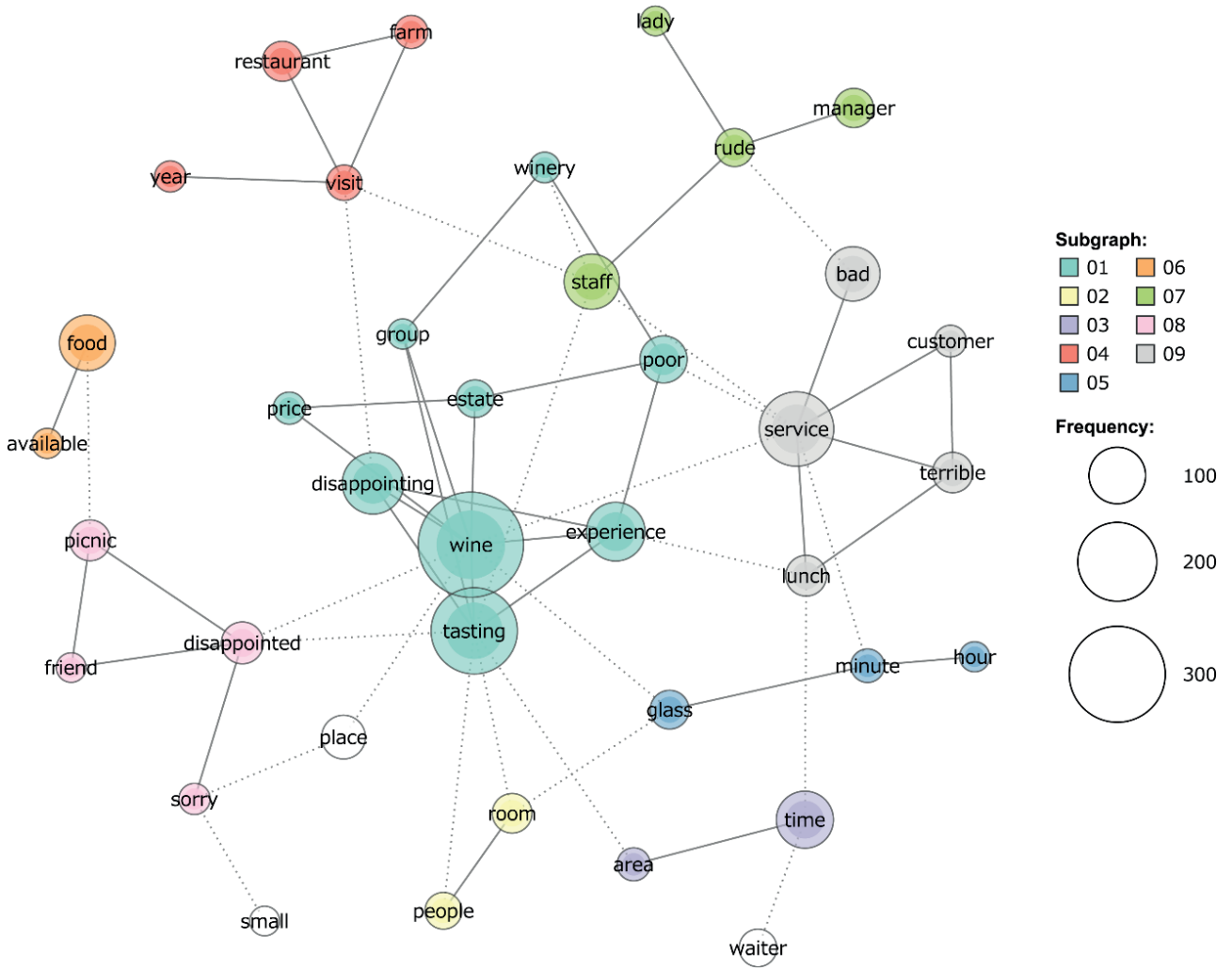


Figure A.9. Co-occurrence of service failure subreview for Stellenbosch region.

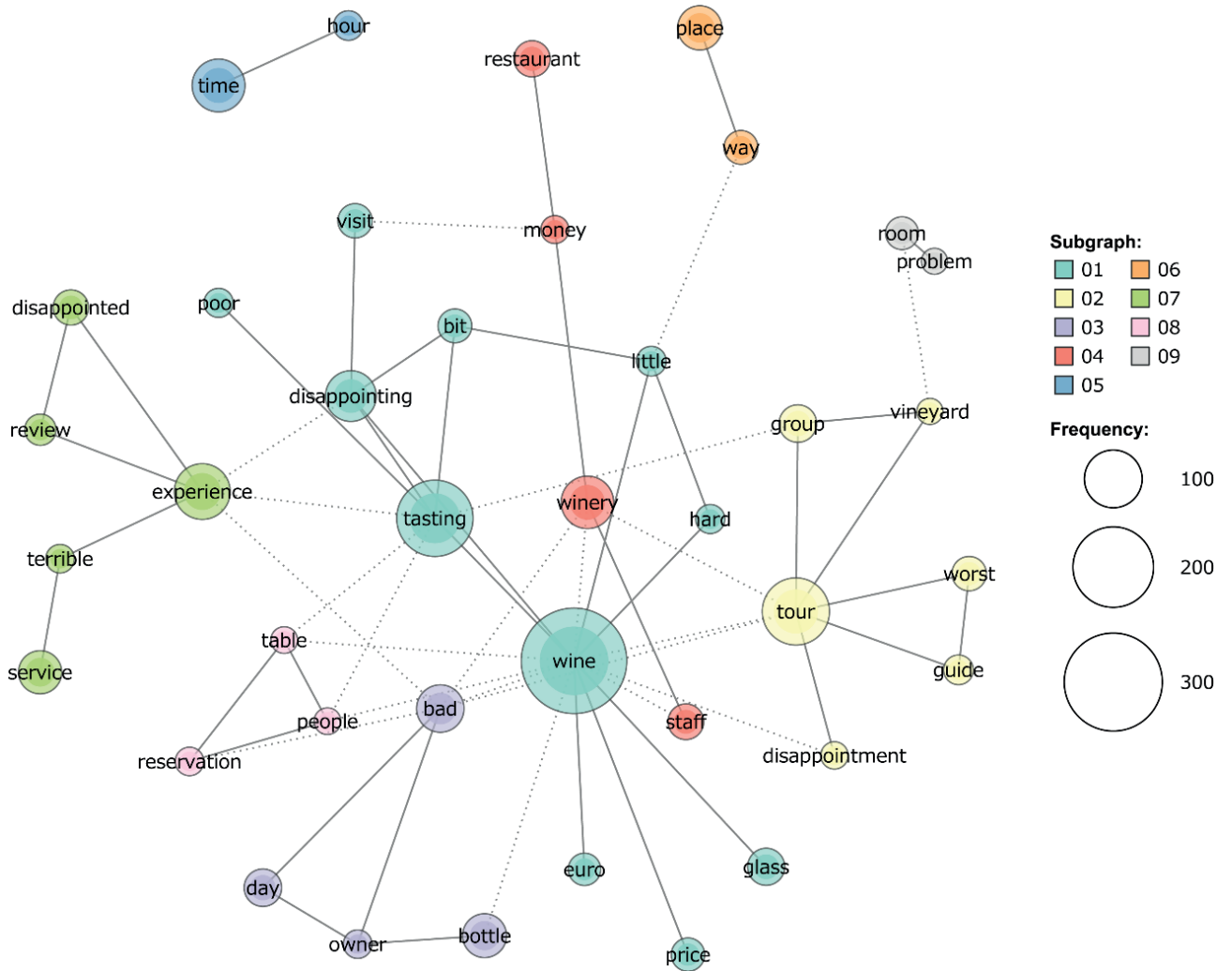


Figure A.10. Co-occurrence of service failure subreview for Tuscany region.



Citation: Filippo F. Fagioli, Giorgia Gallesio, Elena Viganò (2022) Wineries communication strategies. A text mining analysis. *Wine Economics and Policy* 11(1): 73-87. doi: 10.36253/wep-11305

Copyright: ©2022 Filippo F. Fagioli, Giorgia Gallesio, Elena Viganò. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/wep>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Wineries communication strategies. A text mining analysis

FILIPPO F. FAGIOLI*, GIORGIA GALLESIO, ELENA VIGANÒ

Department of Economics, Society, Politics – University of Urbino Carlo Bo, Via Saffi 42, 61029 Urbino (PU), Italy. E-mail: filippo.fagioli@uniurb.it; gi.gallesio@gmail.com; elena.vigano@uniurb.it

*Corresponding author.

Abstract. The digital literacy that has developed in recent decades has resulted in internet playing an important role in the communication of wineries. Business websites, initially used as an exhibitor of products, quickly became one of the most important tools to implement communication strategies used to successfully place the wine product in a competitive market. The purpose of this study is to analyse major Italian wineries websites through textual statistics and text mining methods to provide evidence on the storytelling device adopted by these companies to promote and brand themselves. The information contained in the websites of the selected businesses in Northern, Central and Southern Italy, has been analysed in three steps. The first consisted in investigating categories with which the contents were organized, and the second step involved examining the contents' word clouds which are useful for a qualitative analysis on similarities and differences found in the three different areas. Finally, different strategies were formalized, by reconstructing the structure of concepts underlying the communication models of the wineries of the three areas examined. The results demonstrate considerably different approaches adopted by the areas. While the wineries in Central Italy focus on communication concerning the company, in the North and South, more attention is given to production methods and territory respectively. Thanks to the analysis of word clouds it was also possible to expose the construct which is the basis of narratives used by wineries, followed by the typical communication strategy of the different Italian areas.

Keywords: winery, storytelling, promotion, website, text mining.

1. INTRODUCTION

The advent of the internet and related socio-cultural changes have made consumers increasingly digitally addicted, with significant repercussions on the supply of products, marketing, branding, on the communication which has moved online, on corporate websites and on social networks.

Internet has become the most affordable, most easily accessible, and widely available form of media communication also between wine producers and their stakeholders. For this reason, the quality of wine brand websites is now crucial and plays a strategic role in communication campaigns since it

represents a valid effort to build customer loyalty, develop a brand, increase presence in the tasting room, and to encourage direct purchasing [1–4].

The characteristics of the wine, make it particularly suitable to be linked to experiential components that involve consumers emotionally and cognitively, through the symbolic, hedonistic, and aesthetic nature of post-modern consumption [5,6]. This gives the wineries the opportunity to promote and commercialize its products using content that illustrates the history of the company, and its production techniques, linking the company brand name to the wine and the territory of origin through its website [7].

While stories are an effective way of communicating and involving people, the use of this kind of narration is therefore a valid means of differentiation in a very competitive market such as that of wine. This is particularly true in a country like Italy, which has achieved significant results in both qualitative and quantitative terms. As a matter of fact, Italy is the largest global producer with 17,83% of world total production, equal to over 49.1 million hectolitres, followed by France, with 16,92% and Spain with 14,78% [8], while wineries, which are characterized by a strong orientation to regional tradition, produce wines which are often positioned in premium segments.

The aim of this work consists in investigating communication strategies of the major Italian wine producers through the analysis of their websites and highlighting the differences in their use of storytelling. The analysis focused on two different levels, namely the sections of the main page which indicate a storytelling content and the contents of these sections. Using text mining methodologies, word clouds were formulated capable of summarizing the different topics that characterize the storytelling adopted by Italian wineries and analysing differences in concepts and semiotic approaches among the three different country areas.

This paper is structured as follows. Section 2 presents a literature review on selected keywords. Section 3 describes methods used for the analysis and materials. Section 4 presents results followed by the discussion in section 5 and conclusion in section 6.

2. LITERATURE BACKGROUND

In order to conduct a rigorous literature review with the aim of exploring text mining methodologies applied to business storytelling, five keywords have been defined taking into account the particularity of the wine sector and tools for business promotion. On the basis of

Table 1. Keywords interaction table. Performed using Scopus January 2021.

Keywords	Winery	Storytelling	Promotion	Website	Text mining
Winery	-				
Storytelling	4	-			
Promotion	44	28	-		
Website	47	25	612	-	
Text mining	1	2	33	118	-

these keywords, a search was carried out on the Scopus database, to consult papers, books, abstracts, and articles from both academic and professional publishers. Four subject areas have also been chosen: (i) Economics, Econometrics and Finance; (ii) Business, Management and Accounting; (iii) Agricultural and Biological Sciences; (iv) Environmental Science. The final list of keyword combinations used and the number of articles found is shown in Table 1.

The literature review contains some important evidence. The theme of promoting wineries is strongly addressed to regional wine tourism. For example, Alonso [9] investigated the reciprocal promotion of wineries involved in wine trails and tourism in US Southern states. Maumbe and Brown [10] underlined the role of promotion strategies and their interaction with the place of origin and relations with the local community, as a key element in the development of small wineries. Zamparini et al. [11] collected producers' communication materials and applied audit methods to determine the effectiveness of wineries collective promotion, while Festa et al. [12] identified the promotion of the region as one of the most important factors of cohesion for small wineries. Woods et al. [13] studied appropriate marketing strategies which can help local wineries in the Northern Appalachian states (US) to create increased awareness, differentiation, and value in a crowded wine market and Thach and Cogan-Marie [14] analysed winery websites to assess readiness for wine tourism.

The digital literacy that has developed in recent decades has resulted in internet playing an important role in the communication of wineries which, through a website, have the opportunity to make themselves known in a highly competitive market such as that of wine. If at first these websites were found to be "electronic brochures" of products rather than "dynamic relationship marketing tools" [15], in recent years these websites have become one of the principal business communication channels, providing information in the form of text, photos, digital contents, symbolic elements and emotional stimuli linked to the territory, and capable of

establishing a direct relationship with wine lovers and consumers [7,16-19].

The study of websites and their integration with the communication activities of wine businesses, has been dealt with by Kolb and Thach [20] who analysed the adoption of Web 2.0 and social media by German wineries to determine the impact of winery size on the use of social media, and by Sellitto [21] who investigated e-marketing adopted by a small and successful Australian winery. The quality and major features of wine company websites have been analysed in detail by Galati et al. [22] who compared e-commerce and e-marketing approaches. In addition, Treen et al. [23] researched emotions expressed by wine estate websites and whether the emotions conveyed are related to or can significantly predict the positive or negative sentiment expressed by these websites.

It is interesting to notice that there is a clear lack of research on the themes of wineries and the analysis of their storytelling through the use of text mining methodologies or textual statistics. The concept of storytelling is very broad and has been extensively researched and adapted across many disciplines including psychology [24,25], sociology [26,27], environmental sciences [28,29], education sciences [30,31] and management [32,33].

However, the major applications in the economic fields refer to marketing [34-36], advertising [37,38] and branding of companies [39,40].

According to Sole and Wilson [41] storytelling could be defined as the sharing of knowledge and experiences through narrative and anecdotes in order to communicate lessons, complex ideas, concepts, and causal connections. The main objective of this narrative technique is therefore to involve the recipient, to make concrete what is abstract, and to be remembered over time. In addition, another feature is the spontaneity of writing, which suggests a high degree of diversity in the elements that compose a story [42]. However, Bourion [43] argued that when comparing narratives which have the same aim, the words tend to focus on a short list of topics.

In the wine business context, Frost et al. [44] examined the role of storytelling in the cultural heritage related to wine tourism in Australia, and Parrish and Downing [45] examined wineries in Napa Valley (US) and Stellenbosch (ZA), finding a remarkable symmetry between the types of stories utilised and differences in terminology. Italian wineries were investigated by Kammerlander et al. [46] who analysed the impact of narratives on the family firm's level of innovation.

Although the role of text mining methodologies is widely used in analyses related to the promotion of

product and services [47-49], only two bibliographic results utilized this methodology to analyse a US winery website to identify how businesses communicate family brand identities [50], and to investigate the online narrative of the San Giovese grape variety by examining the characteristics of non-winery-owned online information which may shape wine consumers' behaviour [51].

3. MATERIALS AND METHODS

3.1 *Textual statistics methods*

Textual statistics consists in the analysis of texts using statistical methods. Such texts are intended as a set of distinct elements that have their own frequency and can be compared [52]. This method is largely used especially in linguistic research [53-55] and it has different approaches, ranging from a purely formal analysis, in which the texts are not subjected to any treatment before analysis, to cases in which linguistic information can be used to identify textual forms with specific meaning [56].

The first step of this study was to analyse the frequencies of the section titles extracted from a selected sample of winery websites to assess divergence in the narratives used in the different areas examined.

As suggested by Mora and Livat [42], there is a limited number of topics used in wineries corporate communication. For this reason the titles of the pages have been categorized into six different argumentative dimensions, which represent the most commonly used themes in the websites of the wineries in the selected sample (Table 2).

The first collects all the pages relating to the productive aspects of wine, and pages which explain processes, innovation and production technologies, as well as winemaking and organic certifications. The second category concerns the product and the qualities connected to it. Another important argumentative dimension has been identified in history in which all the titles of the pages concerning heritage, as well as some time references, have been inserted. The last two categories concern the territory and values. As regards the first, all the pages which refer to the land, the landscape, the roots, the resources have been inserted. The last dimension is the most consistent and includes all the pages that refer to values.

3.2 *Text mining methodologies*

The second step of the analysis through text mining methodologies, focused on the investigation of the

Table 2. Argumentative dimensions and related wineries website page titles.

Storytelling Argumentative Dimensions	Page titles (codes)
Production	Production, Process, Research, Technology, Vinification, Winemaking, Innovation, Winegrowers, Facility, Work, Certification, Sustainability, Green, Vegan, Bio
Wines	Wine, Brand, Product, Awards, Grapes, Vine, Vineyard, Cellar, Barrique, Quality
Company	About us, Company, Estate, Group, Market, Marketing, Profile, Projects, Services, Shareholders, Winery
History	History, Today, Tradition, Heritage, Story
Territory	Territory, Terroir, Surroundings, Resources, Roots, Regional, Native, Land, Landscape, Locality, Nature Values, Mission, Union, Vision, World, Thinking, Solidarity, People, Philosophy, Experience, Identity, Knowledge, Art, Determination, Excellence,
Values	Communication, Hospitality, Family, Eco-sustainability, Environment, Biodiversity

elements which characterize the storytelling present on the websites of the major Italian wineries. The term text mining refers to the processes of exploring and analysing large amounts of data in form of texts in order to identify concepts, topics, models and other attributes. According to Feldman and Sanger [57], the use of text mining to probe extracted texts involved three distinct phases: (1) data collection, (2) pre-processing and cleaning, (3) analysis and evaluation of results. Data collection is the processes aimed at identifying a *corpus* of texts relating to the topic, which in our case is represented by the contents of the pages that have been previously identified and which converged into the sets of each area.

The pre-processing and cleaning phase is necessary because some information contained in a corpus may be irrelevant for the analysis and in these cases is removed from the corpus [58,59]. Thanks to the use of specific software, ATLAS.TI, it was possible to remove all the insignificant words that commonly appear in the language, such as prepositions, conjunctions, pronouns, and punctuation.

We decided to use the Word Clouds method to visualize the results. This type of representation is used in various contexts as a means of providing a clear overview of the words that appear most frequently in a given text. For example, Moro et al. [60] use this methodology to establish the breadth of the literature and define the concept of ethnic marketing, characterized by high

heterogeneity. Other applications are in the biomedical field and especially in the emerging field of Big Data and computer science. The method is defined as a useful summary for knowing the number and type of topics present in a body of text [61–63] and is typically obtained by positively correlating the font size of the represented tags, with the text words frequency [64].

After that, it was necessary to carry out a codification of the main concepts which could comprehensively describe the storytelling of the wineries. According to Bazeley [65], coding is a fundamental skill for qualitative analysis and a purposeful step to somewhere. In addition, it provides a means of access to evidence which can be useful to query data, for test assumptions and conclusions. At a descriptive level, naming a code provides a label that connects data to the idea, and from the idea to all the data pertaining to that idea [66].

In our case we decided to develop a codebook common to all three corpora and the choice fell on the text words contained in argumentative dimensions shown in Table 2.

3.3 Data collection

The analysis was based on the major Italian wineries selected using the AIDA database [67]. AIDA offers comprehensive information on the balance sheets of almost all the Italian companies operating in the private sector, enabling a search for individual companies, companies with similar profiles and facilitating detailed analyses. More specifically, dataset contains economic variables such as revenues, value-added, net profits but also additional information such as the address of the company's registered office, its website and a description of its main activity through ATECO 2007 classification¹.

Firstly, Italian companies operating in the beverages sector were selected and, subsequently, those with ATECO code 11.02.10 which identifies companies producing table wines and quality wines. In this way, it was possible to define three territorial contexts according to the legal headquarters of the companies (North, Center, South and Islands). A website availability criterion was subsequently added to the search eliminating those without website. The resulting companies were sorted in decreasing order of 2019 balance sheet revenues, considering successively the first 30 companies for each territorial context.

¹ This classification is the Italian version of the European nomenclature published in the Official Journal of 20 December 2006 (Regulation (EC) no 1893/2006 of the European Parliament and of the Council of 20 December 2006).

Table 3. Descriptive statistics of the wineries selected by geographical area – AIDA database.

Type of company	North				Center				South and Islands			
	No.	Avg. No. of employees	Revenues (€/mil)		No.	Avg. No. of employees	Revenues (€/mil)		No.	Avg. No. of employees	Revenues (€/mil)	
			min	max			min	max			min	max
Public Limited Company (Plc)	14	103	37,90	227,21	4	47	4,67	202,80	5	41	5,96	44,29
Private Limited Company (Ltd)	12	96	32,71	90,08	18	24	1,80	114,22	11	38	4,91	15,34
Cooperative	4	103	45,48	237,18	8	16	1,71	25,92	14	39	4,83	18,78
Total	30	100,66	32,71	237,18	30	29	1,71	114,22	30	39,33	4,83	44,29

With increasing globalization, firms need to build a global marketing strategy to reach customers around the world, and the translation of website contents plays a crucial role in the effectiveness of communication strategies. The dominance of English as a *lingua franca* in international business exchanges is commonly accepted [68], and for this reason, the sample was built with the first thirty companies which had the English version of their website for each area.

Table 3 summarizes the main descriptive characteristics of the sample, from which it is possible to identify the differences among the selected companies in the various areas.

Data shows how in the North there is a clear predominance of more formalized public companies (Plc) with the highest level of revenues compared to those in the Central part of the country, where private companies (Ltd) prevail, and in the South, where cooperatives are predominant.

From a territorial point of view, the Veneto region holds more than 50% of the companies in the North, followed by Tuscany (14) and Marche (10) in the Central regions and in Southern Italy by Puglia (8). In four regions, Liguria, Trentino Alto Adige, Friuli Venezia-Giulia and Molise, no companies matched the selected search criteria (Figure 1).

Once the companies were selected, the websites of each of them was visited. A database was therefore created containing over 270 section titles which explained the narrative adopted by each individual company, and the related content.

4. RESULTS

This investigation allows us to highlight how wine production has a completely different pattern in the three areas considered. Northern Italy is characterized by medium and large enterprises, compared to the

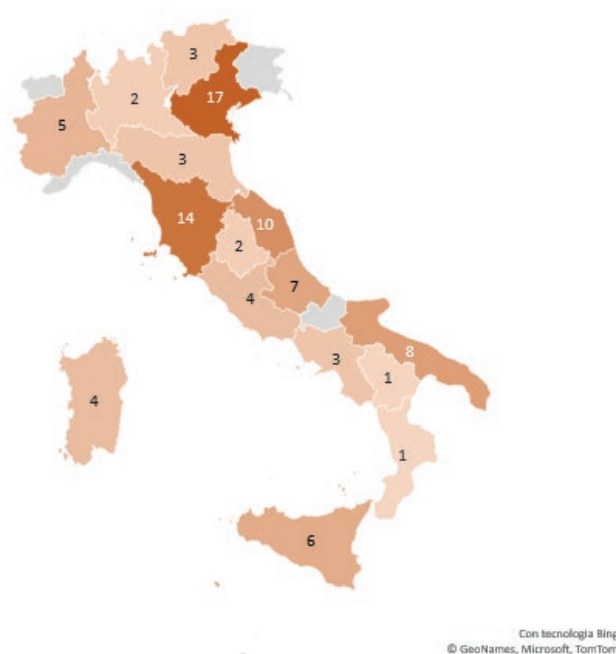


Figure 1. Number of wineries selected by region – Performed in Microsoft Excel.

Center and the South, where less formalized enterprises prevail. This also reflects the reference market of the wineries examined. While those in the North are mostly internationalized with high levels of exports, in Central Italy and the South the reference market remains the national one [69].

The results demonstrate very different communication approaches among the areas. Thanks to the first analysis it was possible to identify the major argumentative dimensions which characterize the storytelling of Italian wineries (Figure 2).

While in the North more reference is made to history and production methods, in Central Italy the narrative focuses on the company and the quality of the wine. In the South however, the wineries mainly base

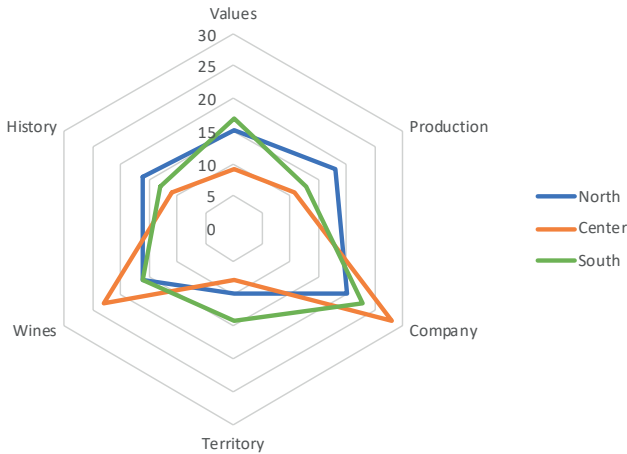


Figure 2. Frequency of wineries pages' title by argumentative dimensions.

their communication on the values and on the territory in which the wine is produced.

The examination of elements which characterize page contents made it possible to formulate three different word clouds referring to the three geographical areas examined. A set of stopwords [70,71] was developed to eliminate all insignificant words for the purpose of the investigation, such as pronouns, verbs, prepositions, conjunctions, spaces, punctuation, which were excluded from the analysis (Appendix A – Tab. A1).

In addition, to obtain meaningful word clouds, we decided to act on the width of the analysis by selecting minimum and a maximum threshold value. According to Xu et al. [72] and Bashri et al. [73] the determination of these values it is decided by the observer. In this case we decided to parameterize this value to the total number of words of each corpus. As regards the minimum value, 0.1% of the total number of words for each corpus has been chosen, while the maximum value was based on the maximum frequency reached by the first word not included in the stopwords list. The result of this process is for the North a frequency between 37 and 18, for Central Italy between 34 and 228, and for South between 29 and 149. The word clouds are shown in Figures 3, 4 and 5. (More detailed information see Appendix A, tables A2-4)

As suggested by Sinclair and Cardew-Hall [74] and Viegas et al. [75], word clouds generated were the starting point for a more in-depth analysis focused on strategies adopted by wineries in the different areas considered.

The codification of the texts based on the words contained in the argumentative dimensions, allow us to extract all sentences which contained those words from the *corpus*.



Figure 3. Northern Italy wineries word cloud - Threshold values (min-max) 37-185 – Performed with ATLAS.TI software.

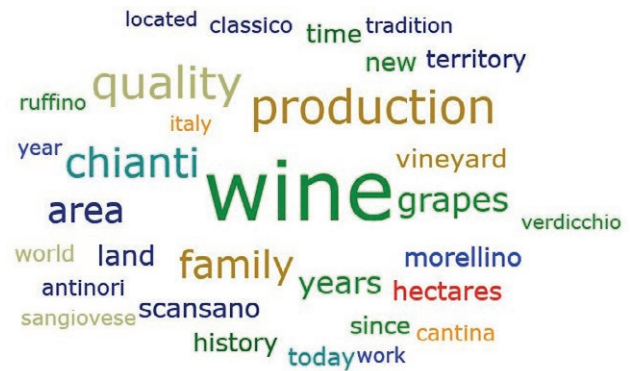


Figure 4. Center Italy wineries word cloud - Threshold values (min-max) 34-228 – Performed with ATLAS.TI software.

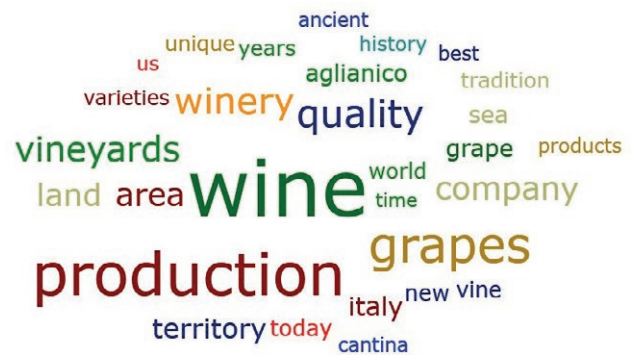


Figure 5. Southern Italy wineries word cloud - Threshold values (min-max) 29-149 – Performed with ATLAS.TI software.

Subsequently, the correspondences between the most commonly used words identified in the word clouds and the encoded sentences were analysed. This analysis was carried out in order to mine sample the most significant quotations in which all the codes that matched up to the

Table 4. Most significant quotation mined from corpus by area.

Area	Code	Quotations
North	“wine” AND “production” AND “quality”	<p>Nero d'Avola organic wine 2017 is the first Italian organic wine whose production processes, thanks to Blockchain technology, have been fully tracked to guarantee quality, provenance and supply chain.</p> <p>The finest eastern Veneto production Bosco Viticoltori is the reference key to place on foreign markets high quality bulk wine, produced directly in the nine wine cellars of the Group</p> <p>Active participation, independence, spirit of cooperation and experience are the values and the intrinsic characteristics of our members, thus guaranteeing the quality of the fruit and of the finished products, productivity and constant care for the consumer, that allow the cooperative to grow” To promote a healthy cooperation in order to achieve the best possible results with the grapes contributed by its members, passing the values and know-how of the wine growing on to the new generation while preserving the natural and environmental surroundings in the production areas.</p> <p>Customer satisfaction is at the heart of our philosophy, and this is achieved through: - management and monitoring of the production chain in order to obtain high quality standards in all typologies of wine produced; - preservation of the typicality of all productions and exaltation of the local terroir in order to maintain its specific characteristics; - differentiation of characteristics of productions through constant research aimed at improving company processes.</p> <p>Complementing this is its system of total quality and hygiene supervision over every phase and place of production, assuring uncompromised wine stability and purity.</p> <p>For the first time in 26 generations, the winery inaugurated a new winery designed to welcome wine enthusiasts inviting them to come into direct contact with their production philosophy based on passion, patience and the continual pursuit of high quality.</p> <p>For many years, the most respected wine guides of Italy have been awarding the winery, praising the transparency and quality of its production.</p>
Center	“wine” AND “production” AND “quality”	<p>The region boasts a great biodiversity from a viticultural point of view, producing both native and international grapes.</p> <p>Always focused on the production of quality wine products, over the years we have organized our traceability system: all stages of production are followed by our trusted employees, our farmers suppliers are followed in all stages of production of the vine and invited promptly to keep in order all the documentation concerning the treatment of the grapes, the appropriate production report and the correct declaration in the case of Igp - Dop grapes.</p> <p>With a capacity of 250,000 hectoliters in steel storage silos and reinforced concrete tanks, the company is one of the most important wineries in Southern Italy for the processing and wholesale of quality wine made from common grapes, PDO and IGP as well as concentrated musts certified for the production of very high quality vinegars.</p>
South	“wine” AND “production” AND “grapes”	<p>The region boasts a great biodiversity from a viticultural point of view, producing both native and international grapes.</p> <p>Always focused on the production of quality wine products, over the years we have organized our traceability system: all stages of production are followed by our trusted employees, our farmers suppliers are followed in all stages of production of the vine and invited promptly to keep in order all the documentation concerning the treatment of the grapes, the appropriate production report and the correct declaration in the case of Igp - Dop grapes.</p> <p>With a capacity of 250,000 hectoliters in steel storage silos and reinforced concrete tanks, the company is one of the most important wineries in Southern Italy for the processing and wholesale of quality wine made from common grapes, PDO and IGP as well as concentrated musts certified for the production of very high quality vinegars.</p>

most commonly used words for each area are present (Table 4).

These quotations were subsequently analysed to look for the correspondences with other codes. Figures 6, 7 and 8 show the results of the analyses in the top down graphs, in which it is possible to examine the differences in the storytelling that characterizes the communication of the wineries of the three areas considered.

5. DISCUSSION

The results of the analyses carried out demonstrate a very different approach in the communication strategies of the wineries of Northern, Central and Southern Italy. In general, communication strategies are based on different aspects, often neglecting the link existing between the quality of wines and the specific characteristics (nat-

ural, but also social and cultural) of their geographical area of origin, considered an essential element for the enhancement of wine productions [76–81].

Through textual analysis of each company's website, and in particular of titles pages, it emerged that, in all three areas, wineries “Company” webpage is a predominant characteristic of websites. Nevertheless the three areas differ from each other in terms of communication approaches (Figure 2). Northern Italy companies tend to focus on the production processes webpages, while Central Italy wineries give more attention to the description of wines quality. In the South wineries tend to describe values related to their productions.

The wordclouds allowed us to add an additional layer of analysis. If the terms Wine, Production, Quality and Grapes characterise the communication of wineries in the three areas, each of them has specific fea-

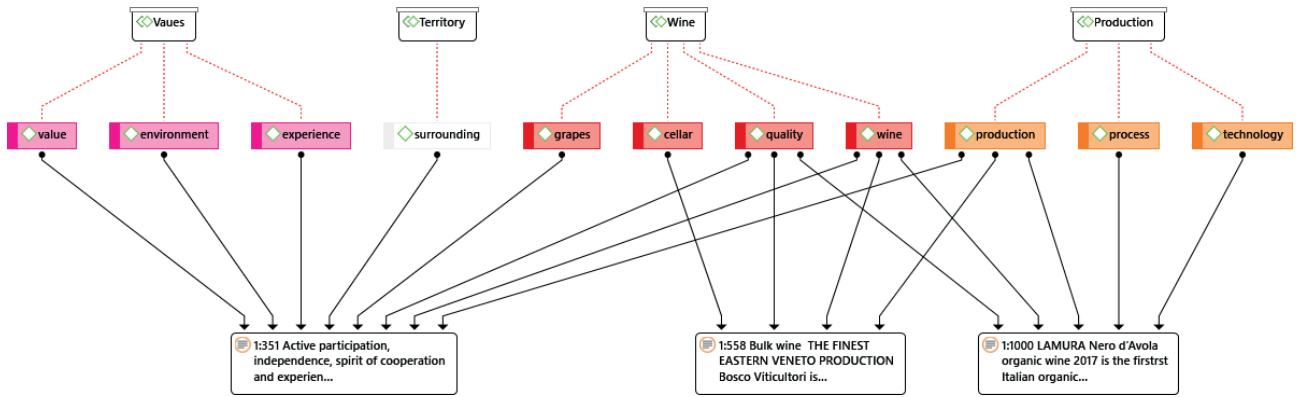


Figure 6. North Italy wineries communication strategy – Performed with ATLAS software.

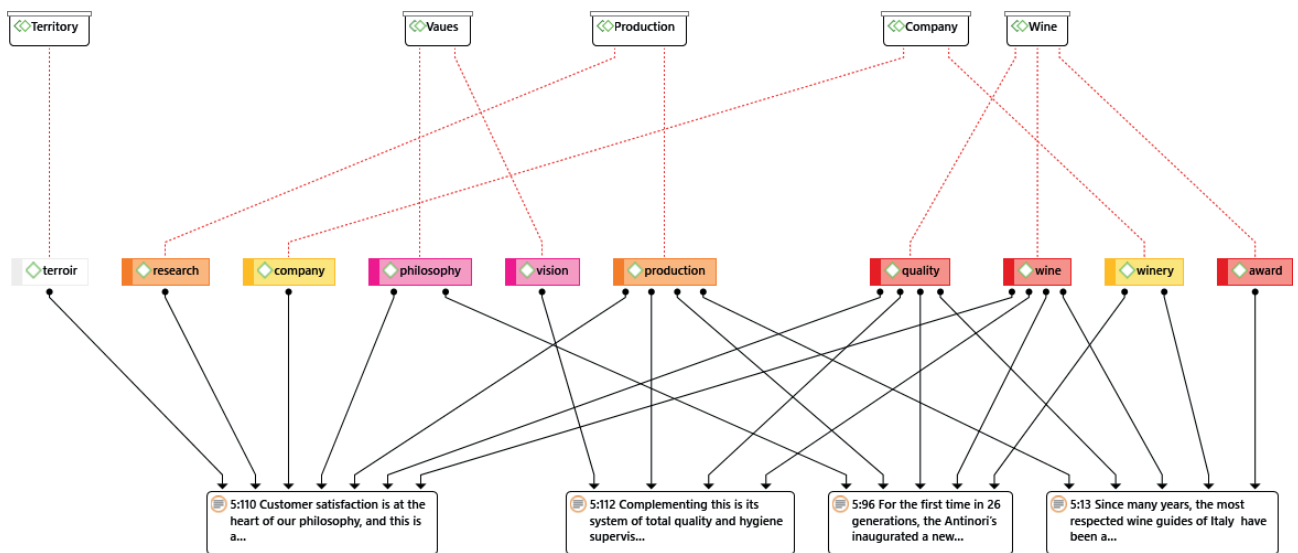


Figure 7. Central Italy wineries communication strategy - Performed with ATLAS software.

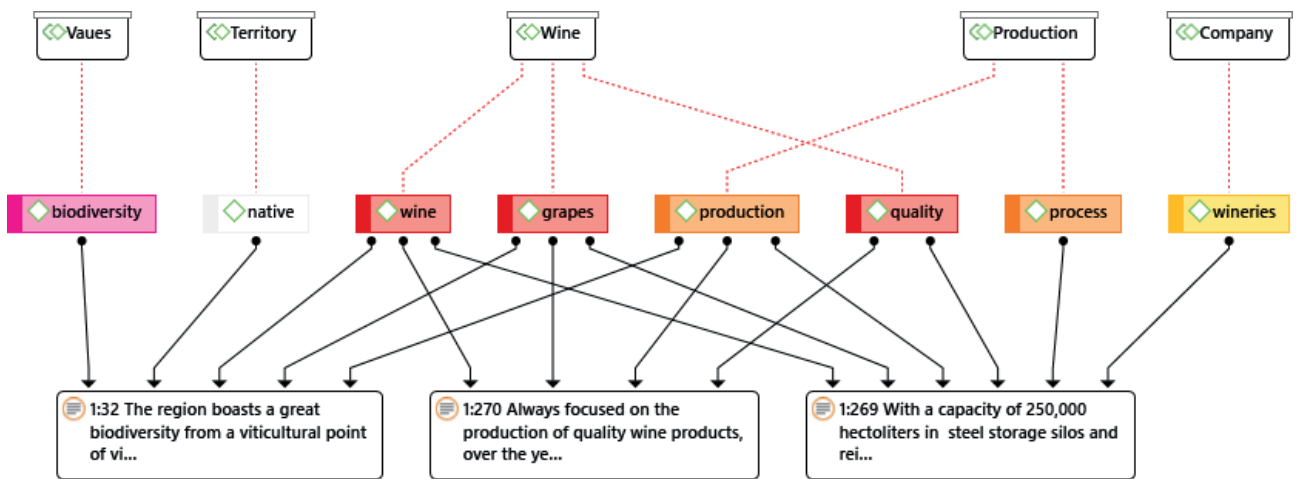


Figure 8. South Italy wineries communication strategy - Performed with ATLAS software.

tures. In the wineries of the North, the term Company stands out, associated with Group and Family (Fig. 3). This seems to be coherent with results shown in Table 3, which indicate a substantial equivalence, in this area, of Public Limited Companies (Plc) and Private Limited Companies (Ltd). In Central Italy, the presence of the term Family could be justified by the fact that here the wineries are mostly Ltd and family managed.

The value of Made in Italy emerges through the terms Italian and/or Italy in all areas considered, however with different modalities and levels of specification. If in the North there are no explicit references, in Central Italy there are more words linked to unequivocally Italian types of wine as Chianti, Sangiovese, Morellino, Verdicchio (Fig. 4), while in the South, also in this case, there is a constant reference to aspects linked to the territory (Land, Area, Territory) and the landscape element is leveraged (Fig. 5).

The world of wine is inextricably linked to the concept of time, which is expressed in various forms: the life cycle of the vine; the vegetative sub-cycle that leads to the ripening of the grapes; the production and aging phase in the cellar; and, for some wines, aging (Grainger and Tattersall, 2007). Not surprisingly, the term Years is a constant in all areas (Figures 3, 4, 5).

The Central and Southern word clouds also reveal a marked contrast between the present and the past, therefore between terms such as Today, and History, Tradition. In the North, on the other hand, there is an orientation towards the future, with terms like New and Innovation. This long-term vision is also accompanied by the communication of values related to sustainability (Environment, Sustainability) and internationalization (World, Market, International).

The use of argumentative dimensions, the mining of quotations and the identification of the most significant ones, allowed us to reconstruct a scheme of the communication strategies used in the three areas, systematising the differences characterising them. The strategies of Northern Italy (Fig. 6) appear less complex than those of Central and Southern Italy. In fact, in this area there are only 4 of the argumentative dimensions as identified in table 2, that is, values, territory, wine and production, while in the Center (Fig. 7) and in the South (Fig. 8), the “company” dimension is added to these.

However, the strategy of Northern Italy appears more detailed.

With regard to value argumentative dimension, it can be noted how in the North, aspects such as the environment and experience are given greater importance, while in the Center the values are declined in the philosophy and vision that characterise the production of

wine. In the South, however, this aspect is declined only in the dimension of biodiversity.

The wine dimension, on the other hand, is communicated by focusing on different aspects, depending on the area considered. More attention is given to the types of grapes and cellars in the North and South, whereas in Central Italy more importance is paid to national and international awards won by wines.

From the point of view of production methods, in Northern and Southern Italy the aspects connected to production processes and technologies are predominant, whereas in Central Italy there is also evidence of research activities connected to the production.

Territory is the least important aspect in all three areas and it is declined differently. While in the North there is a clear reference to territory, in the Center the focus is on terroir. In the South, instead, the winery strategy heads towards the strong connection between wine and territory.

6. CONCLUSION

This work achieves the aim of adding the point of view of wineries in the broader context of wine communication. A detailed analysis of the major Italian wineries' communication strategies was carried out both from a formal and qualitative point of view, allowing us to have a clear picture of the elements which characterize the storytelling of wine companies. The application of text mining methodologies has allowed us to observe a substantial difference in strategies adopted by wineries in North, Central and Southern Italy, and such differences could be a starting point for future research on varying aspects, particularly those regarding the assessments on the effect that these strategies can have on the wine added value or on consumers' preferences [82].

In this regard, an aspect which needs to be examined further is undoubtedly the link with the different dimensions of sustainability, and in particular with the environment, which has been specifically mentioned only by the wineries of Northern Italy. For example, the use of organic farming techniques or the offer of products with low, or no, sulfite content are particularly relevant both for improving the quality of common goods (especially water and soil) at the level of specific territories, meeting the demand of consumers who are increasingly attentive to environmental and health protection [83–85], but who do not seem to be particularly present in the communication strategies of the sample of wineries considered.

Based on the result of this work, future studies could also analyse the evolution of these strategies in

specific local contexts [86,87], or integrate the analysis through the application of text mining methodologies on additional wineries communication tools to evaluate characteristic elements in relation to tourism [88] or wine quality perceptions [89].

REFERENCES

- [1] N. Velikova, J. B. Wilcox, & T. H. Dodd, Designing Effective Winery Websites: Marketing-Oriented versus Wine-Oriented Websites. *6th AWBR International Conference* (2011).
- [2] D. C. Taylor, D. V. Parboteeah, & S. Michael, Winery Websites: Effectiveness Explored. *Journal of Business Administration Online*, 9 (2010).
- [3] N. Leighann & M. Judith, Using winery web sites to attract wine tourists: an international comparison. *International Journal of Wine Business Research*, 26 (2014) 2–26. <https://doi.org/10.1108/IJWBR-07-2012-0022>.
- [4] B. J. Triana, Use of Culture in the Website Brand Management of Kentucky Wine Producers. *The Qualitative Report*, 24 (2019) 2372–2400. <https://doi.org/1052-0147>.
- [5] E. Viganò, G. Antonelli, G. I. Bischi, & F. Tramontana, Consumo e consumatori di prodotti alimentari nella società postmoderna. *ECONOMIA AGRO-ALIMENTARE*, 17 (2015) 59–80. <https://doi.org/10.3280/ECAG2015-001004>.
- [6] G. Sortino, A. Allegra, P. Inglese, S. Chironi, & M. Ingrassia, Influence of an evoked pleasant consumption context on consumers' hedonic evaluation for minimally processed cactus pear (*Opuntia ficus-indica*) fruit. In M.I. Cantwell, ed., *Acta Horticulturae* (2016). <https://doi.org/10.17660/ActaHortic.2016.1141.41>.
- [7] S. Chironi, L. Altamore, P. Columba, S. Bacarella, & M. Ingrassia, Study of wine producers' marketing communication in extreme territories—application of the AGIL scheme to wineries' website features. *Agronomy*, 10 (2020) 721. <https://doi.org/10.3390/agronomy10050721>.
- [8] OIV, *State of the world vitivinicultural sector in 2020* (2020).
- [9] A. D. Alonso, “Standing Alone You Can't Win Anything”: The Importance of Collaborative Relationships for Wineries Producing Muscadine Wines. *Journal of Wine Research*, 22 (2011) 43–55. <https://doi.org/10.1080/09571264.2011.550761>.
- [10] B. M. Maumbe & C. Brown, Entrepreneurial and buyer-driven local wine supply chains: Case study of acres of land winery in Kentucky. *International Food and Agribusiness Management Review*, 16 (2013) 135–157.
- [11] A. Zamparini, F. Lurati, & L. G. Illia, Auditing the identity of regional wine brands: the case of Swiss Merlot Ticino. *International Journal of Wine Business Research*, (2010). <https://doi.org/10.1108/17511061011092429>.
- [12] G. Festa, M. V. Ciasullo, D. Vrontis, & A. Thrassou, Cooperating for competing –A small Italian wineries' internationalisation strategy case study. *Global Business and Economics Review*, 19 (2017) 648–670. <https://doi.org/10.1504/GBER.2017.086607>.
- [13] T. A. Woods, L. Nogueira, & S. H. Yang, Linking wine consumers to the consumption of local wines and winery visits in the Northern Appalachian States. *International Food and Agribusiness Management Review*, 16 (2013) 181–205.
- [14] L. Thach & L. Cogan-Marie, Wine tourism in Burgundy, France: An analysis of marketing practices. *Tourism Review International*, 22 (2018) 2018. <https://doi.org/10.3727/154427218X15202734130468>.
- [15] J. J. Yuan, A. M. Morrison, S. Linton, R. Feng, & S. M. Jeon, Marketing small wineries: An exploratory approach to website evaluation. *Tourism Recreation Research*, 29 (2004) 15–25. <https://doi.org/10.1080/02508281.2004.11081453>.
- [16] D. Rebecca, C. Jodie, F. John, & G. Steve, Social media: communication strategies, engagement and future research directions. *International Journal of Wine Business Research*, 29 (2017) 2–19. <https://doi.org/10.1108/IJWBR-04-2016-0013>.
- [17] J. M. Brás, C. Costa, & D. Buhalis, Network analysis and wine routes: the case of the Bairrada Wine Route. *The Service Industries Journal*, 30 (2010) 1621–1641. <https://doi.org/10.1080/02642060903580706>.
- [18] C. Laurence & J. Alain, The effects of expertise and brand schematicity on the perceived importance of choice criteria: a Bordeaux wine investigation. *Journal of Product & Brand Management*, 26 (2017) 80–90. <https://doi.org/10.1108/JPBPM-11-2015-1030>.
- [19] R. Davidson, A longitudinal study of Australian winery websites. *Asia Pacific Management Review*, 14 (2009) 379–392. <https://doi.org/10.6126/APMR.2009.14.4.01>.
- [20] D. Kolb & L. Thach, Analyzing German winery adoption of Web 2.0 and social media. *Journal of Wine Research*, 27 (2016) 226–241. <https://doi.org/10.1080/09571264.2016.1190324>.
- [21] C. Sellitto, A framework for electronic marketing: Experiences of an early Internet adopting Austral-

- ian winery. *Market Management*, 8 (2008) 48–61. <https://doi.org/10.3917/mama.052.0048>.
- [22] A. Galati, M. Crescimanno, S. Tinervia, & D. Sig-
gia, Website quality and internal business fac-
tors: An empirical investigation in the Italian
wine industry. *International Journal of Wine Busi-
ness Research*, 28 (2016) 308–326. <https://doi.org/10.1108/IJWBR-08-2015-0026>.
- [23] E. Treen, S. Lord Ferguson, C. Pitt, & J. Vella,
Exploring emotions on wine websites: finding joy.
Journal of Wine Research, 29 (2018) 64–70. <https://doi.org/10.1080/09571264.2018.1433139>.
- [24] N. De Vecchi, A. Kenny, V. Dickson-Swift, & S.
Kidd, How digital storytelling is used in mental
health: A scoping review. *International Journal of
Mental Health Nursing*, 25 (2016) 183–193. <https://doi.org/https://doi.org/10.1111/inm.12206>.
- [25] M.-J. Perrier & K. A. Martin Ginis, Changing
health-promoting behaviours through narra-
tive interventions: A systematic review. *Journal of
Health Psychology*, 23 (2016) 1499–1517. <https://doi.org/10.1177/1359105316656243>.
- [26] D. Andersen, Stories of change in drug treatment:
a narrative analysis of ‘whats’ and ‘hows’ in insti-
tutional storytelling. *Sociology of Health & Illness*,
37 (2015) 668–682. <https://doi.org/https://doi.org/10.1111/1467-9566.12228>.
- [27] F. Polletta, Characters in Political Storytelling. *Sto-
rytelling, Self, Society*, 11 (2015) 34–55. <https://doi.org/10.13110/storselfsoci.11.1.0034>.
- [28] M. Beck, Telling stories with models and making
policy with stories: an exploration. *Climate Policy*,
18 (2018) 928–941. <https://doi.org/10.1080/14693062.2017.1404439>.
- [29] M. Jayaratne, G. Sullivan Mort, & C. D’Souza,
Sustainability Entrepreneurship: From Consumer
Concern Towards Entrepreneurial Commitment.
Sustainability, 11 (2019). <https://doi.org/10.3390/su11247076>.
- [30] H. U. Fuchs, From Stories to Scientific Models and
Back: Narrative framing in modern macroscopic
physics. *International Journal of Science Education*,
37 (2015) 934–957. <https://doi.org/10.1080/09500693.2015.1025311>.
- [31] E. Tikhonova & L. Raitskaya, An Overview of
Trends and Challenges in Higher Education
on the Worldwide Research Agenda. *Journal of
Language and Education*, 4 (2018). <https://doi.org/10.17323/2411-7390-2018-4-4-4-7>.
- [32] E. Dalpiaz & G. Di Stefano, A universe of sto-
ries: Mobilizing narrative practices during trans-
formative change. *Strategic Management Journal*,
39 (2018) 664–696. <https://doi.org/https://doi.org/10.1002/smj.2730>.
- [33] J. Hayes & S. Maslen, Knowing stories that matter:
learning for effective safety decision-making. *Jour-
nal of Risk Research*, 18 (2015) 714–726. <https://doi.org/10.1080/13669877.2014.910690>.
- [34] W. Alistair, A. Glyn, & B. Douglas, Developing a
storytelling experience: the case of craft spirits dis-
tilleries in Chicago. *International Journal of Wine
Business Research*, 32 (2020) 555–571. <https://doi.org/10.1108/IJWBR-06-2019-0040>.
- [35] J. Pulizzi, The Rise of Storytelling as the New Mar-
keting. *Publishing Research Quarterly*, 28 (2012)
116–123. <https://doi.org/10.1007/s12109-012-9264-5>.
- [36] T. Chautard & I. Collin-Lachaud, Introducing
the storytelling analysis methodology in mar-
keting: Principles, contributions and implemen-
tation. *Recherche et Applications en Marketing
(English Edition)*, 34 (2019) 27–46. <https://doi.org/10.1177/2051570719841225>.
- [37] S. Hong, J. A. Kang, & G. T. Hubbard, The effects
of founder’s storytelling advertising. *International
Journal of Entrepreneurship*, 2 (2018) 9.
- [38] D. A. Gilliam & K. E. Flaherty, Storytelling by the
sales force and its effect on buyer–seller exchange.
Industrial Marketing Management, 46 (2015) 132–
142. <https://doi.org/https://doi.org/10.1016/j.indmarman.2015.01.013>.
- [39] K. Leissle, “Artisan” as Brand: Adding Value In A
Craft Chocolate Community. *Food, Culture & Soci-
ety*, 20 (2017) 37–57. <https://doi.org/10.1080/15528014.2016.1272201>.
- [40] G. Pereira, Brand storytelling: A three-dimension-
al perspective. *Journal of Brand Strategy*, 8 (2019)
146–159.
- [41] D. Sole & D. G. Wilson, Storytelling in Organiza-
tions : The power and traps of using stories to
share knowledge in organizations. *LILA*, (1999).
- [42] P. Mora & F. Livat, Does storytelling add value
to fine Bordeaux wines? *Wine Economics and
Policy*, 2 (2013) 3–10. <https://doi.org/https://doi.org/10.1016/j.wep.2013.01.001>.
- [43] C. Bourion, No Title. *La Revue des Sciences de Ges-
tion*, 217 (2006) 123–137. <https://doi.org/10.3917/rsg.217.0123>.
- [44] W. Frost, J. Frost, P. Strickland, & J. Smith Magu-
ire, Seeking a competitive advantage in wine tour-
ism: Heritage and storytelling at the cellar-door.
International Journal of Hospitality Management,
87 (2020) 102460. <https://doi.org/https://doi.org/10.1016/j.ijhm.2020.102460>.

- [45] D. Parrish & J. Downing, Stories a world apart: storytelling differentiation in Napa and Stellenbosch. *International Journal of Entrepreneurship and Small Business*, 41 (2020). <https://doi.org/10.1504/IJESB.2020.110801>.
- [46] N. Kammerlander, C. Dessi, M. Bird, & M. Floris, The Impact of Storytelling on Innovation: a Multi Case Study. *Academy of Management Proceedings*, 2015 (2015) 16902. <https://doi.org/10.5465/ambpp.2015.66>.
- [47] U. Takaho, Creating Value with Sales Promotion Strategies that Avoid Price Discounting. In G.E. Smith, ed., *Visionary Pricing: Reflections and Advances in Honor of Dan Nimer* (Emerald Group Publishing Limited, 2012), pp. 213–256. [https://doi.org/10.1108/S1069-0964\(2012\)0000019016](https://doi.org/10.1108/S1069-0964(2012)0000019016).
- [48] Z. Yang, T. Xiao, J. Liu, & Y. Jiang, Promotion depth versus breadth: The effect of mobile promotion and the moderation of social closeness and technical smoothness. *Electronic Commerce Research and Applications*, 44 (2020) 101005. <https://doi.org/https://doi.org/10.1016/j.elerap.2020.101005>.
- [49] T. Kuntner & T. Teichert, The scope of price promotion research: An informetric study. *Journal of Business Research*, 69 (2016) 2687–2696. <https://doi.org/https://doi.org/10.1016/j.jbusres.2015.11.004>.
- [50] B. F. Canziani, D. H. B. Welsh, L.-P. Dana, & V. Ramadani, Claiming a family brand identity: The role of website storytelling. *Canadian Journal of Administrative Sciences / Revue Canadienne des Sciences de l'Administration*, 37 (2020) 68–81. <https://doi.org/https://doi.org/10.1002/cjas.1543>.
- [51] N. Costanza, M. Alberto, & S. Fabiola, Online wine ecosystem: the digital narrative of Sangiovese. *British Food Journal*, 121 (2019) 2683–2695. <https://doi.org/10.1108/BFJ-05-2019-0379>.
- [52] L. L. Lebart, A. Salem, & L. Barry, *Exploring Textual Data*, 1st ed (Springer Netherlands, 1998). <https://doi.org/10.1007/978-94-017-1525-6>.
- [53] J. Savoy, Lexical Analysis of US Political Speeches. *Journal of Quantitative Linguistics*, 17 (2010) 123–141. <https://doi.org/10.1080/09296171003643205>.
- [54] C. Labbé & D. Labbé, How to Measure the Meanings of Words? Amour in Corneille's Work. *Language Resources and Evaluation*, 39 (2005) 335–351. <https://doi.org/10.1007/s10579-006-9002-8>.
- [55] D. Kosmajac & V. Keselj, Twitter user profiling: Bot and gender identification. *CEUR Workshop Proceedings* (0th Working Notes of CLEF Conference and Labs of the Evaluation Forum, 2019).
- [56] F. Lucidi, F. Alivernini, & A. Pedon, *Metodologia della ricerca qualitativa*, 1st ed (Bologna: Il Mulino, 2019).
- [57] R. Feldman & J. Sanger, *The Text Mining Handbook*, 1st ed (Cambridge: Cambridge University Press, 2007). <https://doi.org/10.1017/CBO9780511546914>.
- [58] M. W. Berry & J. Kogan, *Text Mining* (Chichester, UK: John Wiley & Sons, Ltd, 2010). <https://doi.org/10.1002/9780470689646>.
- [59] J. C. Cegan, A. M. Filion, J. M. Keisler, & I. Linkov, Trends and applications of multi-criteria decision analysis in environmental sciences: literature review. *Environment Systems and Decisions*, (2017). <https://doi.org/10.1007/s10669-017-9642-9>.
- [60] S. Moro, G. Pires, P. Rita, & P. Cortez, A text mining and topic modelling perspective of ethnic marketing research. *Journal of Business Research*, (2019). <https://doi.org/10.1016/j.jbusres.2019.01.053>.
- [61] M. Burch, S. Lohmann, D. Pompe, & D. Weiskopf, Prefix Tag Clouds. *2013 17th International Conference on Information Visualisation* (IEEE, 2013), pp. 45–50. <https://doi.org/10.1109/IV.2013.5>.
- [62] J. Feinberg, Wordle. In J. Steele, & N. Iliinsky, eds., *Beautiful Visualization: Looking at Data through the Eyes of Experts*, 1st ed, (Sebastopol, 2010), pp. 37–58.
- [63] B. Y. L. Kuo, T. Hentrich, B. M. Good, & M. D. Wilkinson, Tag clouds for summarizing web search results. *16th International World Wide Web Conference, WWW2007* (2007). <https://doi.org/10.1145/1242572.1242766>.
- [64] F. Heimerl, S. Lohmann, S. Lange, & T. Ertl, Word cloud explorer: Text analytics based on word clouds. *Proceedings of the Annual Hawaii International Conference on System Sciences* (2014). <https://doi.org/10.1109/HICSS.2014.231>.
- [65] P. Bazeley, *Qualitative Data Analysis: Practical Strategies*, 1st ed (London: SAGE Publications Ltd, 2013).
- [66] J. M. Morse & L. Richards, *Readme First for a Guide to Qualitative Methods*, 1st ed (SAGE Publications, 2002).
- [67] Bureau van Dijk, AIDA - Italian company information and business intelligence. (2021).
- [68] J. House, Communicating in English as a lingua franca. *EUROSLA Yearbook*, 2 (2002) 243–261. <https://doi.org/10.1075/eurosla.2.15hou>.
- [69] ISTAT, Wine export data. (2019).
- [70] K. V Ghag & K. Shah, Comparative analysis of effect of stopwords removal on sentiment classifi-

- cation. *2015 International Conference on Computer, Communication and Control (IC4)* (2015), pp. 1–6. <https://doi.org/10.1109/IC4.2015.7375527>.
- [71] W. J. Wilbur & K. Sirotkin, The automatic identification of stop words. *Journal of Information Science*, 18 (1992) 45–55. <https://doi.org/10.1177/016555159201800106>.
- [72] J. Xu, Y. Tao, & H. Lin, Semantic word cloud generation based on word embeddings. *2016 IEEE Pacific Visualization Symposium (PacificVis)* (2016), pp. 239–243. <https://doi.org/10.1109/PACIFICVIS.2016.7465278>.
- [73] M. F. A. Bashri & R. Kusumaningrum, Sentiment analysis using Latent Dirichlet Allocation and topic polarity wordcloud visualization. *2017 5th International Conference on Information and Communication Technology (ICoICT)* (2017), pp. 1–5. <https://doi.org/10.1109/ICoICT.2017.8074651>.
- [74] J. Sinclair & M. Cardew-Hall, The folksonomy tag cloud: When is it useful? *Journal of Information Science*, (2008). <https://doi.org/10.1177/0165551506078083>.
- [75] F. B. Viegas, M. Wattenberg, F. Van Ham, J. Kriss, & M. McKeon, Many Eyes: A site for visualization at internet scale. *IEEE Transactions on Visualization and Computer Graphics*, (2007). <https://doi.org/10.1109/TVCG.2007.70577>.
- [76] S. F. Thode & J. M. Maskulka, Place-based marketing strategies, brand equity and vineyard valuation. *Journal of Product & Brand Management*, 7 (1998) 379–399. <https://doi.org/10.1108/10610429810237673>.
- [77] E. Vaudour, The Quality of Grapes and Wine in Relation to Geography: Notions of Terroir at Various Scales. *Journal of Wine Research*, 13 (2002) 117–141. <https://doi.org/10.1080/0957126022000017981>.
- [78] G. Antonelli & E. Viganò, L'economia dei prodotti agroalimentari tipici tra vincoli tecnici e sfide organizzative. *Italian Journal of Agronomy*, 3 (2009) 125–136.
- [79] G. Antonelli & E. Viganò, Global Challenges in Traditional Food Production and Consumption. In A. Cavicchi, & C.B.T.-C.S. in the T.F.S. Santini, eds., *Woodhead Publishing Series in Food Science, Technology and Nutrition* (Woodhead Publishing, 2018), pp. 25–46. <https://doi.org/https://doi.org/10.1016/B978-0-08-101007-5.00003-8>.
- [80] B. Rocchi & M. Gabbai, Territorial identity as a competitive advantage in wine marketing: a case study. *Journal of Wine Research*, 24 (2013) 291–310. <https://doi.org/10.1080/09571264.2013.837382>.
- [81] L. Camanzi, C. Grazia, E. Giraud-Héraud, & G. Malorgio, Quality differentiation in the Italian wine industry: terroir-based vs. brand-based strategies. *International Journal of Globalisation and Small Business*, 9 (2017) 86–104. <https://doi.org/10.1504/IJGSB.2017.088920>.
- [82] S. Sillani, A. Miccoli, & F. Nassivera, Different preferences for wine communication. *Wine Economics and Policy*, 6 (2017) 28–39. <https://doi.org/https://doi.org/10.1016/j.wep.2017.03.002>.
- [83] IWSR, *The Global Organic Wine Market 2012-2022* (2018).
- [84] G. Di Vita, G. Pappalardo, G. Chinnici, G. La Via, & M. D'Amico, Not everything has been still explored: Further thoughts on additional price for the organic wine. *Journal of Cleaner Production*, 231 (2019) 520–528. <https://doi.org/https://doi.org/10.1016/j.jclepro.2019.05.268>.
- [85] A. Sturla, E. Viganò, & L. Viganò, The organic districts in Italy. An interpretative hypothesis in the light of the common pool resources theory. *Economia Agro-Alimentare*, (2019). <https://doi.org/10.3280/ECAG2019-002013>.
- [86] A. Riviezzo, A. Garofano, J. Granata, & S. Kaka-vand, Using terroir to exploit local identity and cultural heritage in marketing strategies: An exploratory study among Italian and French wine producers. *Place Branding and Public Diplomacy*, 13 (2017) 136–149. <https://doi.org/10.1057/s41254-016-0036-4>.
- [87] K. Riscinto-Kozub & N. Childs, Conversion of local winery awareness. *International Journal of Wine Business Research*, 24 (2012) 287–301. <https://doi.org/10.1108/17511061211280338>.
- [88] A. Maizza, F. Cavallo, & L. Iaia, Web communication e destinazioni enoturistiche: un modello di comunicazione. *13th International Marketing Trends Conference* (Venezia: Università Ca' Foscari, 2014).
- [89] S. Shanmuganathan, P. Sallis, & A. Narayanan, Unsupervised artificial neural nets for modelling the effects of climate change on New Zealand grape wines. *18th World IMACS Congress and MODSIM 2009 - International Congress on Modelling and Simulation: Interfacing Modelling and Simulation with Mathematical and Computational Sciences, Proceedings* (2009), pp. 803–809.

APPENDIX A

Table A1. Stopword list (extract).

a	doing	it's	that's	with
about	don't	itself	the	won't
above	down	i've	their	would
actually	during	Largely	theirs	wouldn't
after	each	let's	them	you
again	effectively	more	themselves	you'd
against	especially	moreover	then	you'll
ahead	essentially	most	there	your
all	estate	mustn't	Therefore	you're
almost	extremely	my	there's	yours
also	few	myself	these	yourself
always	finally	no	they	yourselves
am	for	nor	they'd	you've
an	from	normally	they'll	...punctuation
and	further	not	they're	...spaces
any	generally	of	they've	...numbers
anyway	had	off	this	
are	hadn't	on	those	
aren't	has	once	through	
as	hasn't	only	to	
At	have	or	too	
be	haven't	other	under	
because	having	ought	until	
been	he	our	up	
before	he'd	ours	us	
being	he'll	ourselves	usually	
below	her	out	very	
Below	here	over	was	
between	here's	own	wasn't	
both	hers	primarily	we	
briefly	herself	profile	were	
but	he's	regularly	we're	
by	him	same	weren't	
can	himself	service	we've	
cannot	his	shan't	what	
can't	how	shareholder	what's	
carefully	however	she	when	
certainly	how's	she'd	when's	
clearly	i	she'll	where	
completely	i'd	she's	where's	
could	if	should	which	
couldn't	i'll	shouldn't	while	
currently	i'm	so	who	
did	in	some	whom	
didn't	into	Specially	who's	
Directly	is	Successfully	why	
do	isn't	such	why's	
does	it	than	Widely	
doesn't	its	that	wines	

Table A2. Northern Italy words frequencies.

Word	Frequency
Stop words	> 185
wine	185
quality	144
production	138
company	92
vineyards	72
italian	60
new	58
family	55
grapes	53
world	53
environmental	51
area	50
sustainability	49
work	49
international	48
best	46
years	45
group	43
land	42
innovation	39
market	39
respect	38
Stop words	< 37

Table A3. Center Italy words frequencies.

Word	Frequency
Stop words	> 228
wine	228
production	115
quality	111
chianti	98
family	89
area	80
grapes	75
years	68
land	58
scansano	54
vineyard	53
hectares	52
morellino	51
new	51
time	50
history	49
territory	48
today	47
since	46
world	41
antinori	40
cantina	40
classico	40
sangiovese	37
tradition	37
ruffino	36
located	35
work	35
year	35
italy	34
verdicchio	34
Stop words	< 34

Table A4. South Italy words frequencies.

Word	Frequency
Stop words	> 149
wine	149
production	110
grapes	89
quality	68
winery	65
vineyards	61
company	56
area	55
land	54
territory	48
italy	44
grape	40
aglianico	39
sea	39
new	37
today	37
vine	36
tradition	35
world	35
years	35
varieties	33
vines	33
history	32
us	32
ancient	31
best	31
cantina	31
products	31
time	30
unique	29
Stop words	< 29



Citation: Giulia Gastaldello, Florine Livat, Luca Rossetto (2022) Does Covid scare wine travelers? Evidence from France and Italy. *Wine Economics and Policy* 11(1): 89-106. doi: 10.36253/wep-11550

Copyright: © 2022 Giulia Gastaldello, Florine Livat, Luca Rossetto. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/wep>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Does Covid scare wine travelers? Evidence from France and Italy

GIULIA GASTALDELLO^{1,*}, FLORINE LIVAT², LUCA ROSSETTO¹

¹ *Department of Land, Environment, Agriculture, and Forestry (Tesaf), University of Padova, Viale dell'Università, 35020 Legnaro PD, Italy. E-mail: giulia.gastaldello.1@phd.unipd.it; luca.rossetto@unipd.it*

² *Kedge Business School, Center of Excellence Food, Wine and Hospitality, 680 Cours de la Libération, 33405 Talence, France, E-mail: florine.livat@kedgebs.com*

Abstract. Tourism is sensitive to shocks, 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 while jointly considering the effects of solidarity, situational and personal involvement with wine. 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 are poorly impacted by fear of contagion while it is enhanced by dedicating time to wine in lockdown (i.e., situational involvement) and by willingness to support local wine producers. Implications for sectors stakeholders are suggested.

Keywords: Covid-19, Wine tourism, travel intentions, Covid phobia, involvement with wine, structural equation modelling, solidarity.

1. INTRODUCTION

As past studies highlighted, tourism is vulnerable to shocks. Natural disasters like tsunamis [1], earthquakes [2] and floods [3] have an inevitable impact on tourism flow. In addition, the industry is affected by terrorism like 9/11 in the U.S. [4], [5] or the increased frequency of terrorist attacks in France from 2010 to 2017 [6], [7] and by war [8]. A global economic crisis as the Covid-19 pandemic can also impact on tourism [9]. The latter has indeed highlighted the susceptibility of tourism to measures implemented to counteract the circulation of the virus, mainly restricted mobility and social distancing [10]. Being wine tourism a tourism branch, the present article aims at offering a first comprehensive analysis how the pandemic influences wine tourism intentions in a post-crisis context.

According to the United Nations World Tourism Organization (UNWTO), international arrivals in Europe dropped by 68% between Janu-

ary 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 local (i.e. Asian) tourism [11]. Kuo et al. [12] show that the local number of cases has affected international tourists' arrival in SARS-affected countries but not in Avian flu-affected countries. A similar result was obtained by McAleer et al. [13]. 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 [15]. Lastly, eradicating infectious disease risk associated with Malaria, Dengue, Yellow Fever, and Ebola could increase international tourism demand and increase tourism expenditure [16].

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 [17]. 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, Asian tsunami, and threat of terrorism [18]. In Taiwan, visitors' arrivals had not fully recovered 11 months after an earthquake [19]. Cultural differences play a role in the recovery of disaster-hit destinations [20]. In the path toward recovery, the destination's attribute can also change and attract some dark tourism [21]. Shocks can lead tourists to substitute destinations [22]. However, with the Covid-19 crisis, the tourism industry faces 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 [23, 24].

In such contexts, wine tourism can be seen as local tourism substituting non-local (i.e., international) tourism, and it can be favoured in a context of restricted mobility and fear of contagion due to uncertainty and fear of travelling abroad. Moreover, with an economic downturn, tourists might privilege short breaks instead of more extended stays. Proximity has been identified as a critical factor for the success of wine tourism [25].

Wine tourism has also been acknowledged as a substitute for urban tourism, as it is perceived as safer in the case of a terrorist threat [6]. Moreover, as tourism stakeholders make a claim for more sustainable practices and for the need to question the volume growth of the international tourism industry in a climate change context [10], wine tourism could be a possible answer. Following the pandemic, clusters of wineries relying mostly on foreign tourism like those identified in Conegliano Valdobbiadene area [26] can strongly benefit of these behaviours. In this respect, it is worth understanding post-lockdown domestic wine tourism intentions.

To the best of our knowledge, though, the impact of the Covid-19 pandemic on wine tourism has not yet been analysed. Therefore, the present work aims at exploring how the Covid-19 pandemic impacted wine tourism intentions both after the lockdown (ALWTINT) and in the long-run (LRWTINT), starting from the main antecedents identified by the sector's literature such as involvement with wine (WI) while considering new negative and positive contingency factors, such as the effect of fear and anxiety towards the virus – further referred to as Covid Phobia (CPH) –, solidarity towards national winemakers (SUPLOCW) and acquired interest in wine during the lockdown (AQWINT), reflecting situational involvement. Changes in wine tourism travel patterns following the pandemic are also explored. Notably, we focus on two major wine tourism players, Italy and France, hosting the highest number of wine tourists in Europe (14 [27] and 10 million a year, respectively). Figure 1 shows the number of overnight stays in hotels per month in both countries, which has dramatically fallen in 2020 and 2021 compared with 2019, despite a temporary recovery during summer. Indeed, although the 2020-2021 overnight stays trend is positive (+19% and +7% in 9 months for Italy and France, respectively), 2021 records are still remarkably lower than in 2019 (-44% in the first 9 months of 2021 for both Italy and France).

The relevance of this exploratory analysis lies in its contribution to shed light on how the Covid-shock impacted on wine tourists' travel intentions, which is key to predicting future demand developments and drafting appropriate recovery strategies. The present study is indeed among the first to assess the impact of Covid and of the lockdown on wine tourism while modelling positive and negative drivers together. In light of the uncertainty around the evolution of the current pandemic as well as of its severe consequences on tourism sector, this information is strategic to tourism operators and especially to wineries for understanding how the virus impacted wine tourists' behaviour and effectively

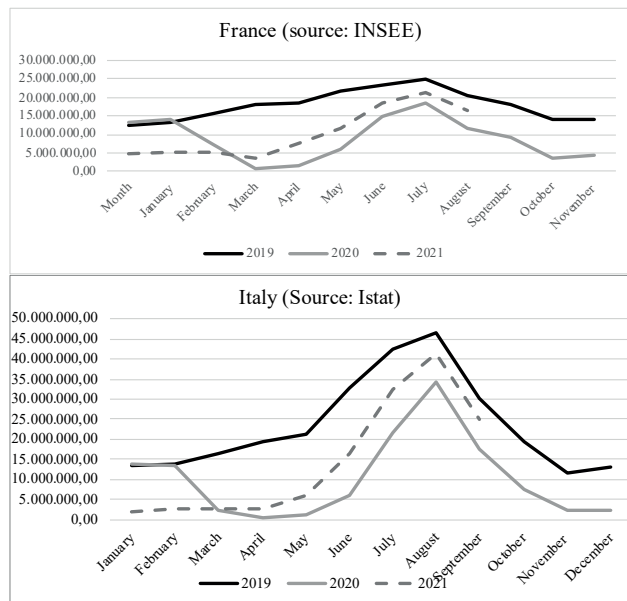


Figure 1. Monthly overnight stays in hotels.

plan a recovery strategy. Certainly, wine tourism is an important tool for building and strengthening brand reputation [28], boosting both awareness and demand of a product [29]. Findings also provide useful information for planning communication and marketing activities in the pandemic context.

The following section (section 2) provides an overview on the main acknowledged antecedents of wine tourism intentions, as well as on context-related factors that can impact on the latter. Section 3 describes materials and methods, including a description of the sample, 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, an extensive literature has developed on the antecedents of wine tourism intentions [30, 31, 32]. 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 [30, 33] affecting wine tourists experiential priorities [30]. 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 on their behaviour. Particularly, tourism has been among the hardest-hit sectors due both to the strict limitations to mobility imposed by govern-

ments and to 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 [34]. 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.

2.1 Fear of Covid-19 and Corona-phobia

Due to its disrupting effects on worldwide economies, to 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 [35, 36, 37]. The literature defines fear as an emotion caused by danger, pain or harm [35], [38], representing the awareness of danger [35]. Anxiety, instead, is a psychological response to fear [39]. Differently from psychological discomforts deriving from other extreme events such as natural disasters [40], [41], or accidents [42], those induced by human-to-human transmissible diseases like Covid-19 are extensive and long-standing [43].

Therefore, a prolonged and amplified state of fear and anxiety towards a major catastrophic situation such as the current pandemic may trigger anxiety disorders defined as phobias [44]. In this respect, Arpaci et al. [44] developed a psychometric, self-report tool – the Covid Phobia Scale (C19P-S) – to diagnose what they classify as corona phobia. Particularly, high values recorded by the scale detect the presence of a state of great fear and anxiety towards the virus. The C19P-S is originally 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 [45]. In this regard, travelling is potentially connected with a great risk of infection implying uncontrolled contact with thousands of individuals. Although the global scale of this health crisis may have levelled out the perceived risk of infection when traveling to other destinations [35], fear and anxiety towards the virus can lead to identifying travelling as a dangerous activity and to avoid it. Consequently, subjects manifesting greater levels of Covid phobia may show weaker post-lockdown wine tourism intentions (ALWTINT).

Hence, we postulate the following hypotheses:

H1. Covid phobia (CPH) impacts negatively on post-lockdown wine tourism intentions (ALWTINT).

H2. Covid phobia (CPH) mediates the effect of long-run wine tourism intentions (LRWTINT) on post-lockdown wine tourism intentions (ALWTINT).

2.2 Involvement with wine

The key role of involvement in marketing is widely recognized among scholars [46] as it is acknowledged to affect consumer decision-making processes and behaviour [47, 48]. The literature distinguishes among three types of involvement: *enduring* or *personal*, connected to the presence of a long-term personal relevance [50], [51], *physical*, arising from specific product characteristics, and *situational*, which is short-term and results from temporary changes in a consumer's environment [49]. 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 [49, 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 [52, 53, 54]. Hedonic products, indeed, tend to create higher involvement [55]. Particularly, findings reveal that product involvement can significantly affect wine consumers when choosing which wine to purchase [53], impacts on wine tourists' behavioural intentions [30], motivations [32] and travel patterns [33]. However, the extent of its effect may change based on socio-demographics such as age [54], [56]. 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 personal involvement, also referred to as ego-involvement. Recently, Bruwer and Huang [56, 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 [33] conceptualized a tool to capture ego-involvement with wine in the wine tourism context – the Wine Involvement Scale (WIS) – by extending Laurent & Kapferer's [57] widely applied Consumer Involvement Profile (CIP) scale. Indeed, the CIP scale has been adopted by several tourism studies in different cultural contexts which contributed to proving its consistency [58]. Notably, the WIS developed by the authors includes three dimensions:

expertise, enjoyment, and symbolic centrality. By segmenting a sample of fine wine consumers based on the wine involvement construct, the authors found that different involvement segments show significantly different intention to visit a wine region in the near future, highlighting the central role of involvement in predicting wine tourism. Sparks [30] further underlined the critical role that ego-involvement (i.e., personal involvement) can play as a motivator in wine tourism. The following hypotheses are accordingly proposed:

H3. (Personal) involvement with wine (WI) positively affects post-lockdown wine tourism intentions (ALWTINT)

H4. (Personal) involvement with wine (WI) positively affects long-run wine tourism intentions (LRWTINT)

2.3 Acquired interest in wine and solidarity during the first lockdown

As mentioned above, the high infection rate of Covid-19 [35] forced entire countries into lockdowns during which only first necessity industries (e.g., food and pharmaceutical industries) were allowed to operate. Obligated to slow down, people found more free time on their hands which could be dedicated to exploring their interests and to leisure activities [34]. Interest is defined as the degree of enjoyment a subject gets from engaging in specific activities [59]. Based on the literature, it can be affirmed that wine tourism is driven by an underlying interest, at various levels, in wine [33], [60]. Therefore, wine tourists have plausibly employed part of their free time engaging in wine-related activities, as some people did with cooking [60], 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 – [49]. Consequently, the new normality of the lockdown may have fostered a situational involvement with wine, boosting the effect of enduring involvement with the product as an antecedent of leisure tourism intentions [62]. As involvement is an antecedent of the decision to partake in wine tourism, it is reasonable to hypothesize that also situational involvement (i.e., an increased interest in wine following the lockdown) reinforces both long-term and short-term wine tourism intentions. Indeed, interests can drive intentions [59]. Moreover, it can amplify the predictive power of personal involvement with wine on the intention to visit a wine region.

H5. Acquired interest in wine (AQWINT) mediates the effect of involvement with wine (WI) on post-lockdown wine tourism intentions (ALWTINT).

H6. Acquired interest in wine (AQWINT) mediates the effect of involvement with wine (WI) on future wine tourism intentions (LRWTINT).

H7. Acquired interest in wine (AQWINT) positively affects post-lockdown wine tourism intentions (ALWTINT).

H8. Acquired interest in wine (AQWINT) positively affects long-run wine tourism intentions (ALWTINT).

As pointed out by other academics [63], 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 [64, 65], and the strong association between direct sales of local producers and the desire to support to local communities [66]. Accordingly, direct sales are one of the pillars around which the wine tourism industry is built [67, 25, 28]. 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 (SUPLOCW) positively affects post-lockdown wine tourism intentions (ALWTINT).

H10. Willingness to support local wineries (SUPLOCW) positively affects long-run wine tourism intentions (LRWTINT).

3. MATERIALS AND METHODS

3.1 Data collection and survey

The population of interest for the study is Italian and French wine consumers having an 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 oenogastronomy. Specifically, over 40 Facebook groups and wine stakeholders were involved, and shared the survey with their online communities. Data collection lasted two months, June and July 2020. Alike Villacé-Moliner, Fernández-Muñoz et al. [68], 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., 69, 70], allowing to shrink time and monetary costs of data

collection and to recruit hard to reach communities [71] while accounting for multiple eligibility requirements [72]. The main disadvantages of snowball sampling are self-selection bias and over-representation of subgroups having similar characteristics [72]. These limitations were addressed by collecting a large sample and by trying to diversify it socio-demographically.

The questionnaire included 7 main sections investigating the following dimensions: socio-demographics, ego-involvement with wine (WI), Covid phobia (CPH), acquired interest in wine during the pandemic (AQWINT), previous wine tourism experience, wine tourism intentions (LRWTINT, ALWTINT), 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.

Household income is captured through 4 descriptive statements adapted from Istat annual survey on life conditions. For example, A sufficient economic situation is described as follows: *“My monthly household income was usually just sufficient to cover expenses and I/we could hardly save part of it.”*

Potential economic constraints to travel are captured through one statement measuring family income variations following the pandemic, ranging from 1=much worse, to 5=much improved (Table 1).

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 [33].

Involvement with wine (WI) is captured through Brown et al.'s [33] wine involvement scale (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 WIS includes 15 items measured on a 7-point Likert scale, where 1 = totally disagree and 7 = totally agree.

Fear and anxiety towards Covid (CPH) are captured by adapting Arpaci et al. [44] Covid-19 phobia scale (C19P-S). In the present study, the C19P-S is preferred to similar scales [e.g., 37] due to its capability to embody the effects of both Covid-related fear and anxiety. Considering the aim of the study, which is not diagnostic but rather to highlight potential negative effects of Covid-19 on wine tourism intentions, the adapted C19P-S scale (further referred to as CPH scale in the text) includes the psychological and social dimension measured through 7 items selected based on loading scores.

Like the wine involvement construct (WI), 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).

Long-run wine tourism intentions (LRWTINT) are captured through a single item adapted from Sparks [30] 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 (SUPLOCW) 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*”.

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

3.2 Sample description

A total of 751 questionnaires was collected. Incomplete surveys were excluded, and the final sample was reduced to 713 valid questionnaires. For the sake of the analysis, only people having previous wine tourism experience were considered (n=553), 412 of whom 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, with typically woman travelling with their partner, with a high income [61, 73, 74, 75].

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 enjoy 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).

3.3. 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 long-term tourism intentions (LRWTINT), among Italian and French wine tourists. AMOS software is used to further perform Structural Equation Modelling (SEM). SEM is widely applied in many fields of study dealing with human-based data, particularly in consumer behaviour studies, tourism included [32, 76, 77]. 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 [78]. 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 [78]. 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, the factor analysis (EFA) with principal component as the extraction method and oblique rotation is run. Like in other studies [30], 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 load 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 [58]. Therefore, the symbolic centrality dimension is dropped, contributing to maintain an adequate sample-size/parameters ratio for SEM analysis [78]. Based on Cronbach’s alpha, other items are trimmed from both CPH and WI scales. The final WI scale includes 7 items, while CPH comprise 5 items. No items are removed from AQWINT scale (5 items).

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	3.1	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	20.1	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	50.3
	Good	180	43.7	49	34.8
Income Variation After Covid	Much worse	12	2.9	6	4.2
	Worse	119	28.9	32	22.7
	Unchanged	268	65.0	94	66.7
	Improved	12	2.9	9	6.4
	Much Improved	1	0.2	0	0.0

N=355

Source: own elaboration.

Secondly, we proceed with the confirmatory factor analysis (CFA) of the measurement model (MM), the results of which are presented in Table 2. To evaluate MM's Goodness-of-fit (GOF), Root Mean Square Error of Approximation (RMSEA) and 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 are considered based on sample size (n) and on the number of observed variables in the model (m) according to Hair et al.'s guidelines [78]. Overall GOF of the measurement model (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 χ^2 should not be significant [e.g., 30], this statistic tends to penalize larger samples and models with a higher number of observed variables [78]. According to sample size (n = 553) and number of observed variables (m = 17) of the MM applied,

significant p-values for χ^2 are expected [78]. Construct Reliability (CR) and Average Variance Extracted (AVE) are above the recommended thresholds for all latent constructs ($CR > .7$; $AVE > .5$) [78], and all standardized factor loadings are significant and above the ideal threshold (.7) providing evidence of convergent validity for all scales [78]. Discriminant validity is also supported by AVE exceeding inter-construct correlations [78].

For step 2, i.e., the analysis of the causal relationships between constructs, 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 [79].

Lastly, cross-cultural differences between France and Italy are further explored through a multigroup analysis (MGA). Before path differences between the two

Table 2. Factor loadings and reliability of the measurement model.

	Item description	Factor loading ^a	Average	Construct
			Variance extracted (%) ^b	Reliability ^c
			AVE	CR
<i>Covid Phobia (CPH)</i>				
CPH1	The fear of coming down with coronavirus makes me very anxious.	0.91	67.9	.91
CPH2	I am extremely afraid that by traveling me/ my family might become infected by the coronavirus.	0.81		
CPH3	News about coronavirus-related deaths causes me great anxiety.	0.88		
CPH4	After the coronavirus pandemic, I feel extremely anxious when I see people coughing.	0.76		
CPH5	The idea of traveling with big groups of people (e.g., by train or plane) makes me anxious	0.78		
<i>Involvement with wine (WI)</i>				
WI1	My interest in wine makes me want to visit wine regions	0.80	73.9	.95
WI2	My interest in wine has been very rewarding	0.86		
WI3	Wine represents a central life interest for me	0.84		
WI4	Wine represents a central life interest for me	0.92		
WI5	I have invested a great deal in my interest in wine	0.92		
WI6	Much of my leisure time is devoted to wine-related activities	0.90		
WI7	People come to me for advice about wine	0.78		
<i>Acquired Wine Interest in lockdown (AQWINT)</i>				
AQWI1	During the lockdown, I learnt 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 on-line 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. [78] as an indicator of convergent validity.

c. CR was computed based on Hair et al. [78].

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 on the French and Italian samples separately to assess configural invariance. The latter condition is confirmed by the MM showing acceptable fitting for both groups (Italy $\chi^2(412) = 361.77$; $df=112$; $p < .001$; $\chi^2/df = 3.23$; RMSEA = .07; CFI = .96; TLI = .95; SRMR = .04; France $\chi^2(141) = 242.99$; $df=112$; $p < .001$; $\chi^2/df = 2.17$; RMSEA = .09; CFI = .94; TLI = .93; SRMR = .05). Moreover, the totally free multiple group model (TF) reveals acceptable fit ($\chi^2(553) = 605.10$; $df=224$; $\chi^2/df = 2.70$; $p < .001$; 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 [78], supporting configural invariance. Subsequently, we test the model for metric invariance by comparing the fit of the constrained model (M1), where all factor loadings are imposed to be equal between the groups, and of the unconstrained model (M0), 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 [79]:

$$\chi^2 = -2 \log \left[\frac{L(M_1)}{L(M_0)} \right] = \{-2 \log[L(M_1)]\} - \{-2 \log[L(M_0)]\} \quad (1)$$

This step brings statistical evidence that the measurement model (MM) measures the same constructs in both the groups considered: if the χ^2 statistic between the two models is significant, it means model estimates differ between the groups. In our study, model's metric invariance is supported (χ^2 test $p = .625$), confirming the equivalence of psychometric properties of the MM across groups [78]. Therefore, it is appropriate to proceed with multi-group comparisons. Single paths are further tested to identify which effects are significantly different between groups. In light of the size difference between the two groups, estimations have been weighted over groups numerosity.

4. RESULTS

4.1 Wine tourism travel paths before Covid and post-lockdown travel intentions.

Descriptive statistics of the samples are presented in Table 3. 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 EU 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 ($F(1, 508) = 2.26, p = .13$). Instead, Italian wine tourists tend to prefer shorter trips (the 43.4 visits to a wine region no longer than 1 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).

With respect to wine holidays after mobility restrictions, the great majority of both French and Italian wine tourists plans wine travel in a different region and to stay

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
Preferred 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.

*After Covid wine travel statistics refer solely to wine tourists who are most likely to have a wine holiday after the end of mobility restrictions (ALWTINT ≥ 4; France n = 87; Italy n = 324).

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 (LRWTINT)	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.

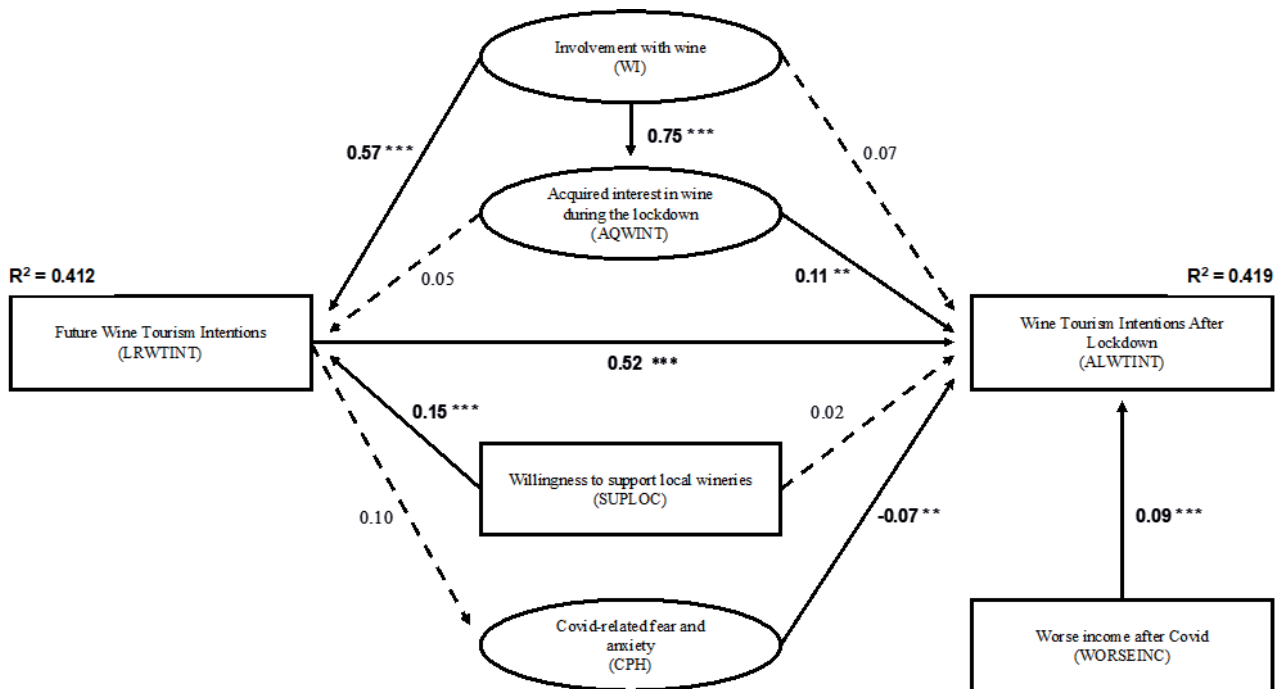


Figure 2. Path diagram with standardized regression coefficients: SEM results on the whole sample. Note: n = 553; ***p < .01; **p < .05; *. Significant paths are represented with a continuous line and the related structural weights are reported in bold.

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), which are typically family run farms with a limited number of rooms. This variation does not seem to be related to fear and anxiety towards Covid as no significant difference in CPH emerged for wine tourists preferring an *agriturismo* (F (1, 322) = 1.5, p = .22) or a hotel (F (1, 322) = 1.7, p = .20) for a post-lockdown wine holiday. 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 on the long-term and after the lifting of mobility bans (Table 4).

4.2 Structural model results

The structural model (SM) is first tested on the whole sample (Figure 2). 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 LRWTINT and ALWTINT variance respectively. Involvement with wine is a significant antecedent of long-term wine tourism intentions (WI -> LRWTINT; β = .57; p < .001), which is the main predictor, followed by willingness to support national wineries (SUPLOCW -> LRWTINT; β = .15; p < .001). As regards the willing-

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. 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. *** $p < .01$ ** $p < .05$.

ness to go on a wine holiday after the lifting of mobility restrictions (ALWTINT), it is significantly predicted by both LRWTINT ($\beta = .52$; $p < .001$), and by AQWINT ($\beta = .11$; $p = .04$). A worse family income following the pandemic (WORSEINC) positively affects ALWTINT as well, although to a lesser extent ($\beta = .09$; $p = .01$). 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 \rightarrow ALWTINT $\beta = -.07$; $p = .05$) but no significant effect on LRWTINT. Finally, as expected, WI is a significant antecedent of AQWINT in lockdown ($\beta = .75$; $p < .001$).

While the relationship between WI and LRWTINT is not significantly mediated by AQWINT, the effect of WI on ALWTINT is fully mediated by the construct (direct effect $\beta = .07$; $p = .28$; indirect effect $\beta = .09$; $p = .04$). Regarding mediation of CPH among LRWTINT and ALWTINT, a significant indirect effect was found ($\beta = -.01$; $p = .04$), although having a limited size. Table

5 summarizes the results obtained from the SEM analysis for all the hypotheses postulated while correlations, mean, and standard deviation of the variables included in the path diagram are proposed in Table 6.

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).

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 ($\beta = .20$; $p < .001$), while it is negative and non-significant for the French sub-sample ($\beta = -.18$; $p = .13$). Slightly significant differences are found also for the effect of CPH and of WORSEINC on ALWTINT (χ^2 CPH (351, 553) = $-.22$, $p = .07$; χ^2 WORSEINC (351, 553) = 2.65 , $p = .09$). Similarly to the former effect, the two paths are not significant in the

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.

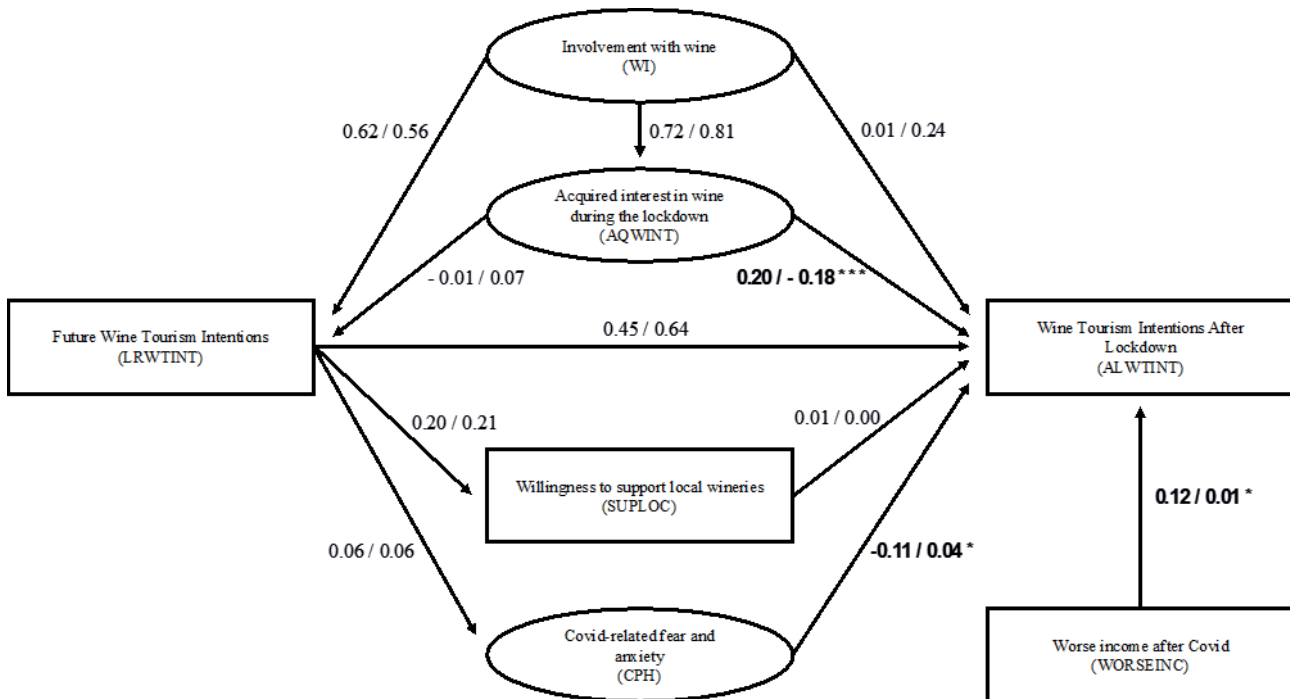


Figure 3. Multigroup comparisons between Italy and France. Note: n = 553; ***p < 0.01; **p < 0.05; *p < 0.1. The first result refers to Italy, the second to France. Significant results are reported in bold.

French sub-sample (CPH -> ALWTINT France $\beta = .04$; $p = .48$; WORSEINC -> ALWTINT France $\beta = -.05$; $p = .86$) but they are for the Italian one. Particularly, CPH has a significant negative impact on ALWTINT (CPH -> ALWTINT Italy $\beta = -.11$; $p < .001$) while a worse income (WORSEINC -> ALWTINT Italy $\beta = .51$; $p < .001$). Results of multigroup comparisons are summarized in Figure 3.

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 LRWTINT is not significantly different between France and Italy ($\chi^2 (352, 553) = 3.80$, $p = .15$). A significant difference exists for the mediation of AQWINT on WI and ALWTINT ($\chi^2 (352, 553) = 11.39$, $p = .003$). 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 $\beta = .15$; $p < .004$; France $\beta = -.15$; $p = .092$).

5. DISCUSSION AND CONCLUSION

The present study is among the first to provide a comprehensive overview on how an unprecedented event like the pandemic affected wine tourists' behavioural intentions considering both positive and negative factors. To do so, we focus on two major wine tourism actors which have been severely hit by Covid-19: Italy and France.

Generally, this analysis suggests the pandemic boosted wine tourism intentions rather than 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 to another European country. Diversely, the share of tourists willing to travel to a neighbouring wine region is significantly smaller. Both the average length of stay in the wine region and the planned budget for a wine holiday record an increase compared to pre-Covid, despite a considerable share of respondents declaring a worse economic situation following the pandemic. This observation is consistent with the overnight stays peak recorded between July and August 2020 in both countries, when most Covid limitations were lifted. For the future wine tourism research agenda, it would be interesting to evaluate whether the pandemic encouraged wine holidays instead of other trips among (wine) tourists.

A switch from hotels to *agriturismo* emerged in the Italian sample, which does not appear to be connected to fear of contagion. National tourism statistics support this tendency since, compared to 2019, overnight stays in accommodations other than hotels (e.g., *agriturismo*, camping) recorded a lower decrease (-45%) than hotel ones (-56%) in 2020. Moreover, they grew more than hotel stays in 2021 (+27%, compared to +19% for hotels), and are therefore recovering faster from the 2020/2019 drop: while the 2021/2019 variation for hotels is still above -40%, other accommodations raised to -28%. Further research is needed to verify the extent of such behavioural changes and to explore their drivers.

In our study, Covid-induced fear and anxiety (CPH) only shows a minor and poorly significant negative effect on wine tourism intentions after the lockdown (ALWTINT). This is despite the data collection time-frame, i.e. after the first wave of infection, when information on the virus and potential treatments was still scarce. Moreover, CPH does not mediate the relationship between future wine tourism intentions (LRWTINT) and intention to go on a post-lockdown wine holiday. The mild negative impact of CPH may be explained by the fact that wine tourists tend to be older than regular tourists, and the Covid-mortality rate is greater for the

elderly [81]. Nevertheless, in line with existing studies [e.g., 35], CPH does not constitute a substantial deterrent to wine holidays. Although more research is required, we can reasonably connect this outcome to a higher perceived safety of rural destinations (like wine regions) compared to city ones [6]. This hypothesis is reinforced by recent findings showing how the threat of Covid intensifies consumers' tendency to avoid crowding [82], which is easier in rural area.

It should be noted that the impact of CPH is remarkably higher for the Italian sample, where its direct effect on wine tourism intentions after the lockdown is negative and significant ($\beta = .11$, $p < .01$). At the same time, it is non-significant for French respondents. Trust in official communications may have played a role in determining this country difference since, as Villacé-Molinero et al. [68] highlighted, they impact on the likelihood to stick to travel plans. Therefore, this is an essential factor to be considered by future research on the topic.

The fact that AQWINT in lockdown significantly affects post-lockdown wine tourism intentions (ALWTINT) suggests that the proper communication strategy can help attracting wine tourists ahead of time. The prolonged duration of the Covid pandemic enhances the relevance of this finding, drawing attention on the strategic role played by virtual wine content and social-media marketing in reaching a wider audience and retain existing consumers during infection peaks. By fostering an increase of online content use, Covid has also boosted their long-term marketing potential in reducing the time and financial investment for wine tourists approaching unknown wineries and wine regions.

The effect of such activities, though, may vary from country to country. Indeed, the influence of situational wine involvement (AQWINT) on post-lockdown wine tourism intentions (ALWTINT) shows a significant direct effect only for the Italian subsample ($\beta = .20$; $p < .001$). The same variable is also a mediator of personal involvement with wine (WI) on ALWTINT for both French and Italians, while playing a greater and positive role for the latter. Summing up, while in Italy situational involvement 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.

Nevertheless, as past studies suggest [33, 62], the significant mediation of AQWINT on the path from WI to wine tourism intentions supports the relevance of situational involvement in enhancing the predictive power of WI. Academically, this finding paves the way to further research exploring the role of situational involvement in predicting wine tourism intentions and behaviour.

WI further confirmed to be a key antecedent of long-term wine tourism intentions, [52, 53, 54]. 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, which is beyond the scope of this study.

Solidarity, intended as the willingness to support local wineries by purchasing their products (SUPLOCW), emerged as a noteworthy driver of long-term wine tourism intentions. This finding is in line with proximity being a key driver of wine tourism [25], which is also supported by the remarkable share of day-trippers in the sample. Moreover, it highlights the strong connection between the wine tourism phenomenon and support to rural communities through direct sales [66] and, on a greater scale, 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 [10]. Winery owners and tourism stakeholders should build on the willingness to support local businesses to attract travellers outside major city destinations, designing sustainable itineraries and experiences in rural areas.

Post-lockdown wine tourism intentions (ALWTINT) seem to benefit of proximity as well, being positively impacted by negative repercussions of Covid-19 on household income. So, in a sense, trips to close wine areas may represent an attractive and affordable getaway for families suffering the negative financial repercussions of Covid-19. This is true especially for the Italian subsample, where the effect is significant and not negligible (β 0.12; $p < .01$).

Despite some researchers argue that the pandemic brought people attention on society problems [63], in our model solidarity with local winemakers after the Covid-19 crisis does not impact intentions to go on a wine holiday after the lockdown significantly. This outcome may be the result of risks connected to travelling representing a too high price to pay to prioritize collective wellbeing, since the potential losses associated with Covid infection include health issues.

Whilst offering a comprehensive overview on a still unexplored topic, the present study comes with some limitations, which are 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. 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 present study results represent an exploratory step forward to their comprehension.

To conclude, the pandemic has deeply impacted tourism dynamics, inducing changes in travellers' behaviour that call for fast, innovation-based responses [68]. 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 [83]. Covid itself is still undefeated, and new viral variants are emerging. The findings of this study, therefore, provide wine tourism stakeholders with relevant information on how such unprecedented circumstances impact wine tourists' behaviour and to effectively plan a recovery strategy accordingly. 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 important role played by constraints in behavioural research [84].

REFERENCES

- [1] E. Calgaro, K. Lloyd, Sun, sea, sand and tsunami: examining disaster vulnerability in the tourism community of Khao Lak, Thailand, Singap. J. Trop. Geogr. 29(3) (2008) 288–306. 10.1111/j.1467-9493.2008.00335.x.
- [2] M. Mazzocchi, A. Montini, Earthquake effects on tourism in central Italy, Ann. Tour. Res. 28(4) (2021) 1031–1046.
- [3] B. Faulkner, S. Vikulov, Katherine, Washed out one day, back on track the next: a post-mortem of a tourism disaster, Tour. Manag. 22(4) (2001) 331–344. 10.1016/S0261-5177(00)00069-8.
- [4] C. Bonham, C. Edmonds, J. Mak, The Impact of 9/11 and Other Terrible Global Events on Tourism in the United States and Hawaii, J. Travel Res. 45 (2006) 99–110. 10.1177/0047287506288812.
- [5] P. Gut, S. Jarrell, Silver Lining on a Dark Cloud: The Impact of 9/11 on a Regional Tourist Destination, J. Travel Res. 46 (2007) 147–153. 10.1177/0047287507299590.
- [6] G. Song, F. Khan, M. Yang, Probabilistic assessment of integrated safety and security related abnormal events: a case of chemical plants, Saf. Sci. 113 (2019) 115–125. 10.1016/J.SSCI.2018.11.004.

- [7] O. Gergaud, F. Livat, H. Song, Terrorism and Wine Tourism: The Case of Museum Attendance, *J. Wine Econ.*, 13(4) (2018) 375–383. 10.1017/jwe.2018.41.
- [8] A. Fleischer, S. Buccola, War, terror, the tourism market in Israel, *Appl. Econ.* 34(11) (2002) 1335–1343.
- [9] H. Song, S. Lin, Impacts of the Financial and Economic Crisis on Tourism in Asia, *J. Travel Res.* 49(1) (2010) 16–30. doi: 10.1177/0047287509353190.
- [10] S. Gössling, D. Scott, C. M. Hall, Pandemics, tourism and global change: a rapid assessment of COVID-19. *J. Sust. Tour.* 29(1) (2020) 1–20. 10.1080/09669582.2020.1758708
- [11] H.-I. Kuo, C.-L. Chang, B.-W. Huang, C.-C. Chen, M. McAleer, Estimating the Impact of Avian Flu on International Tourism Demand Using Panel Data, *Tour. Econ.* 15(3) (2009) 501–511. 10.5367/00000009789036611.
- [12] H. I. Kuo, C. C. Chen, W. C. Tseng, L. F. Ju, B. W. Huang, Assessing impacts of SARS and Avian Flu on international tourism demand to Asia, *Tour. Manag.* 29(5) (2008) 917–928. 10.1016/J.TOURMAN.2007.10.006.
- [13] M. McAleer, B. W. Huang, H. I. Kuo, C. C. Chen, C. L. Chang, An econometric analysis of SARS and Avian Flu on international tourist arrivals to Asia, *Environ. Model. Softw.* 25(1) (2010) 100–106. 10.1016/J.ENVSOF.2009.07.015.
- [14] M. Novelli, L. Gussing Burgess, A. Jones, B. W. Ritchie, ‘No Ebola...still doomed’ – The Ebola-induced tourism crisis, *Ann. Tour. Res.* 70 (2018) 76–87. 10.1016/J.ANNALS.2018.03.006.
- [15] M. Gallivanid, B. Oppenheimid, N. K. Madhav, 2019. Using social media to estimate Zika’s impact on tourism: #babymoon, 2014–2017. *PLoS One* 14(2), e0212507. 10.1371/journal.pone.0212507.
- [16] J. Rossello, M. Santana-Gallego, W. Awan, Infectious disease risk and international tourism demand, *Heal. Policy Plan.* 32(4) (2017) 538–548. 10.1093/heapol/czw177.
- [17] J. Durocher, Recovery Marketing: What to Do after a Natural Disaster, *Cornell Hotel Restaur. Adm. Q.*, 35(2) (1994) 66–70. 10.1177/001088049403500220.
- [18] H. H. Lean, R. Smyth, Asian Financial Crisis, Avian Flu and Terrorist Threats: Are Shocks to Malaysian Tourist Arrivals Permanent or Transitory?, *Asia Pacific J. Tour. Res.* 14(3) (2009) 301–321. 10.1080/10941660903024034.
- [19] J. H. Huang, J. C. H. Min, Earthquake devastation and recovery in tourism: the Taiwan case, *Tour. Manag.* 23(2) (2002) 145–154. 10.1016/S0261-5177(01)00051-6.
- [20] B. Rittichainuwat, Ghosts: A travel barrier to tourism recovery, *Ann. Tour. Res.* 38(2) (2011) 437–459. 10.1016/J.ANNALS.2010.10.001.
- [21] A. Biran, W. Liu, G. Li, V. Eichhorn, Consuming post-disaster destinations: The case of Sichuan, China, *Ann. Tour. Res.* 47 (2014) 1–17. 10.1016/J.ANNALS.2014.03.004.
- [22] H. Song, R. T. R. Qiu, J. Park, A review of research on tourism demand forecasting: Launching the Annals of Tourism Research Curated Collection on tourism demand forecasting, *Ann. Tour. Res.* 75 (2019) 338–362. 10.1016/J.ANNALS.2018.12.001.
- [23] T. Dogru, U. Bulut, Is tourism an engine for economic recovery? Theory and empirical evidence, *Tour. Manag.* 67 (2018) 425–434. 10.1016/J.TOURMAN.2017.06.014.
- [24] L. Cheng, J. Zhang, Is tourism development a catalyst of economic recovery following natural disaster? An analysis of economic resilience and spatial variability, *Curr. Issues Tour.* 23(20) (2020) 2602–2623. 10.1080/13683500.2019.1711029.
- [25] D. Getz, G. Brown, Critical success factors for wine tourism regions: A demand analysis, *Tour. Manag.* 27(1) (2006) 146–158. 10.1016/j.tourman.2004.08.002.
- [26] V. Boatto, L. Galletto, L. Barisan, F. Bianchin, The development of wine tourism in the Conegliano Valdobbiadene area, *Wine Econ. Policy.* 2(2) (2013) 93–101. 10.1016/J.WEP.2013.11.003.
- [27] R. Garibaldi, Rapporto sul Turismo Enogastronomico Italiano 2020. Trend e tendenze. (Accessed 15 June 2021). <https://www.robtagaribaldi.it/rapporto-sul-turismo-enogastronomico/>
- [28] J. Winfree, C. McIntosh, T. Nadreau, An economic model of wineries and enotourism, *Wine Econ. Policy.* 7(2) (2018) 88–93. 10.1016/J.WEP.2018.06.001.
- [29] S. Castriota, M. Delmastro, The Economics of Collective Reputation: Evidence from the Wine Industry, *Am. J. Agric. Econ.* 97(2) (2015) 469–489. 10.1093/ajae/aau107.
- [30] B. Sparks, Planning a wine tourism vacation? Factors that help to predict tourist behavioural intentions, *Tour. Manag.* 28(5) (2007) 1180–1192. 10.1016/j.tourman.2006.11.003.
- [31] D. Alonso, R. A. Fraser, D. A. Cohen, Exploring wine tourism in New Zealand: The visitors’ points of views, *Tour. Anal.* 13(2) (2008). 171–180. 10.3727/108354208785664247.
- [32] C. Afonso, G. M. Silva, H. M. Gonçalves, M. Duarte, The role of motivations and involvement in wine tourists’ intention to return: SEM and fsQCA

- findings, *J. Bus. Res.* vol. 89 (2018). 10.1016/j.jbusres.2017.11.042.
- [33] G. P. Brown, M. E. Havitz, D. Getz, Relationship between wine involvement and wine-related travel, *J. Travel Tour. Mark.*, 21(1) (2007) 31–46. 10.1300/J073v21n01_03.
- [34] S. Gammon, G. Ramshaw, Distancing from the Present: Nostalgia and Leisure in Lockdown. *Leis. Sci.* 43(1-2) (2020) 1–7. 10.1080/01490400.2020.1773993.
- [35] J. M. Luo, C. F. Lam, Travel anxiety, risk attitude and travel intentions towards ‘travel bubble’ destinations in Hong Kong: Effect of the fear of COVID-19, *Int. J. Environ. Res.* 17(21) (2020) 1–11. 10.3390/ijerph17217859.
- [36] M. A. Mamun, M. D. Griffiths, First COVID-19 suicide case in Bangladesh due to fear of COVID-19 and xenophobia: Possible suicide prevention strategies, *Asian J Psychiatr* 51 (2020) 102073. 10.1016/j.ajp.2020.102073.
- [37] D. K. Ahorsu, C.-Y. Lin, V. Imani, M. Saffari, M. D. Griffiths, A. H. Pakpour, The Fear of COVID-19 Scale: Development and Initial Validation., *International journal of mental health and addiction.* (2020) 1–9. 10.1007/s11469-020-00270-8.
- [38] N. N. De Hoog, W. W. Stroebe, J. B. De Wit, The processing of fear-arousing communications: How biased processing leads to persuasion, *Soc. Influ.* 3(2) (2008) 84–113.
- [39] D. A. Clark, A. T. Beck, *Cognitive therapy of anxiety disorders: Science and practice.* Guilford Press, 2011.
- [40] H. Lazaratou, T. Paparrigopoulos, C. Anonitri, N. Alexandropoulou, G. Galanos, C. Papageorgiou, Sleep problems six-months after continuous earthquake activity in a Greek island., *Psychiatr. Psychiatr.* 29(1) (2018) 25–33.
- [41] J. M. Longman et al., Rationale and methods for a cross-sectional study of mental health and wellbeing following river flooding in rural Australia, using a community-academic partnership approach, *BMC Public Health* 19(1) (2019) 1–15.
- [42] W. Dai et al., Prevalence of acute stress disorder among road traffic accident survivors: a meta-analysis., *BMC psychiatry.* 18(1) (2018) 1–11.
- [43] L. Yu Lin et al., The immediate impact of the 2019 novel coronavirus (COVID-19) outbreak on subjective sleep status, *Sleep Med.*, 77 (2020) 348–354. 10.1016/j.sleep.2020.05.018.
- [44] I. Arpacı, K. Karataş, M. Baloğlu, The development and initial tests for the psychometric properties of the COVID-19 Phobia Scale (C19P-S), *Pers. Individ. Dif.* 164 (2020), 110108. 10.1016/j.paid.2020.110108.
- [45] J. Schijven, L. C. Vermeulen, A. Swart, A. Meijer, E. Duizer, A. M. de Roda Husman 2020, Exposure assessment for airborne transmission of SARS-CoV-2 via breathing, speaking, coughing and sneezing, *medRxiv*, 20144832. 10.1101/2020.07.02.20144832.
- [46] N. Michaelidou, S. Dibb, Consumer involvement: a new perspective, *Mark. Rev.* 8(1) (2008) 83–99. 10.1362/146934708x290403.
- [47] A. J. Broderick, R. D. Mueller, A Theoretical and Empirical Exegesis of the Consumer Involvement Construct: The Psychology of the Food Shopper, *J. Mark. Theory Pract.* 7(4) (1999) 97–108. 10.1080/10696679.1999.11501855.
- [48] Prebensen, Nina K., et al., Motivation and involvement as antecedents of the perceived value of the destination experience. *J. of Trav. Res.* 52(2) (2013) 253–264.
- [49] J. L. Zaichkowsky, Measuring the involvement construct, *J. Consum. Res.* 12(12) (1985) 341–52.
- [50] O. A. Ogbeide, J. Bruwer, Enduring involvement with wine: Predictive model and measurement, *J. Wine Res.* (3) (2013) 210–226. doi: 10.1080/09571264.2013.795483.
- [51] L. Lockshin, T. Spawton, Using Involvement and Brand Equity to Develop a Wine Tourism Strategy, *J. Wine Mark.* 13(1) (2001) 72–81.
- [52] J. Bruwer, I. Lesschaeve, Wine Tourists’ Destination Region Brand Image Perception and Antecedents: Conceptualization of a Winescape Framework, *J. Travel Tour. Mark.*, 29(7) (2012) 611–628. doi: 10.1080/10548408.2012.719819.
- [53] J. Bruwer, C. Buller, Product involvement, brand loyalty and country-of-origin (COO) brand preferences of Japanese wine consumers, *J. Wine Res.* 24(1) (2013) 38–58.
- [54] D. Roe, J. Bruwer, Self-concept, product involvement and consumption occasions: Exploring fine wine consumer behaviour, *Br. Food J.* 119(6) (2017) 1362–1377. doi: 10.1108/BFJ-10-2016-0476.
- [55] I. Lesschaeve, J. Bruwer, The importance of consumer involvement and implications for new product development, in *Consumer-Driven Innovation in Food and Personal Care Products*, H. MacFie and S. R. Jaeger, Eds. Cambridge: Woodhead Publishing Ltd, (2010) 386–423.
- [56] J. Bruwer, J. Huang, Wine product involvement and consumers’ BYOB behaviour in the South Australian on-premise market., *Asia Pacific J. Mark. Logist.* 24(3) (2012) 461–481.

- [57] G. Laurent, J. Kapferer, Measuring consumer involvement profiles, *J. Mark. Research.* 22(1) (1985) 41–53.
- [58] Gursoy, Dogan, and Erdogan Gavcar. International leisure tourists' involvement profile. *Ann. Tour. Res.* 30(4) (2003) 906-926.
- [59] J. C. Hong, M. Y. Hwang, M. C. Liu, H. Y. Ho, Y. L. Chen, Using a 'prediction-observation-explanation' inquiry model to enhance student interest and intention to continue science learning predicted by their Internet cognitive failure, *Comput. Educ.*, 72 (2014) 110–120. [10.1016/j.compedu.2013.10.004](https://doi.org/10.1016/j.compedu.2013.10.004).
- [60] A. Nella, E. Christou, Segmenting Wine Tourists on the Basis of Involvement with Wine, *J. Travel Tour. Mark.* 31(7) (2014) 783–798. doi: [10.1080/10548408.2014.889639](https://doi.org/10.1080/10548408.2014.889639).
- [61] G. Easterbrook-Smith, *By Bread Alone: Baking as Leisure, Performance, Sustenance, During the COVID-19 Crisis*, *Leis. Sci.* 43(1–2) (2021) 36–42. [10.1080/01490400.2020.1773980](https://doi.org/10.1080/01490400.2020.1773980).
- [62] M. Havitz, E. Mannel, C. Roger, Enduring involvement, situational involvement, and flow in leisure and non-leisure activities. *J. Leis. Res.* 37(2) (2005) 152-177
- [63] A. W. Cappelen et al. Solidarity and fairness in times of crisis, *J. Econ. Behav. Org.* 186 (2021) 1-11.
- [64] C. Mauracher, I. Procidano, G. Sacchi, Wine tourism quality perception and customer satisfaction reliability: the Italian Prosecco District. *J. Wine Res.* 27(4) (2016) 284-299.
- [65] UNWTO, *Georgia Declaration on Wine Tourism. Fostering sustainable tourism development through intangible cultural heritage*, (2016).
- [66] E. Giampietri, D. Koemle, X., Yu, A. Finco, Consumers' sense of farmers' markets: tasting sustainability or just purchasing food?. *Sust.* 8(11) (2016) 1157. <https://doi.org/10.3390/su8111157>
- [67] A. D., Alonso, A. Bressan, M. O'Shea, V., Krajsic, Perceived benefits and challenges to wine tourism involvement: An international perspective. *Int. J. Tour. Res.* 17(1) (2015) 66-81. <https://doi.org/10.1002/jtr.1967>
- [68] T. Villacé-Molinero, J. J. Fernández-Muñoz, A. Orea-Giner, L. Fuentes-Moraleda, Understanding the new post-COVID-19 risk scenario: Outlooks and challenges for a new era of tourism, *Tour. Manag.* 86 (2021) 104324. doi: <https://doi.org/10.1016/j.tourman.2021.104324>.
- [69] S. Park, B. Stangl, Augmented reality experiences and sensation seeking, *Tour. Manag.* 77 (2020) 104023. doi: [10.1016/J.TOURMAN.2019.104023](https://doi.org/10.1016/J.TOURMAN.2019.104023).
- [70] F. Baltar, I. Brunet, Social research 2.0: virtual snowball sampling method using Facebook, *Internet Res.* 22(1) (2012) 57–74. doi: [10.1108/10662241211199960](https://doi.org/10.1108/10662241211199960).
- [71] K. Sabin, L. G. Johnston, K. Sabin, Sampling hard-to-reach populations with respondent driven sampling, *Methodol. Innov. Online.* 5(2) (2010) 38–48. doi: [10.4256/mio.2010.0017](https://doi.org/10.4256/mio.2010.0017).
- [72] G. Robins Sadler, H.-C. Lee, R. S.-H. Lim, J. Fullerton, Recruitment of hard-to-reach population subgroups via adaptations of the snowball sampling strategy, *Nurs. Heal. Sci.* 12 (2010) 369–374. doi: [10.1111/j.1442-2018.2010.00541.x](https://doi.org/10.1111/j.1442-2018.2010.00541.x).
- [73] S. Charters, J. Ali-Knight, Who is the wine tourist?, *Tour. Manag.* 23(3) (2002) 311–319. doi: [10.1016/S0261-5177\(01\)00079-6](https://doi.org/10.1016/S0261-5177(01)00079-6).
- [74] V. Asero, S. Patti, Wine tourism experience and consumer behavior: The case of sicily, *Tour. Anal.* 16(4) (2011) 431–442. doi: [10.3727/108354211X13149079788936](https://doi.org/10.3727/108354211X13149079788936).
- [75] M. G. Brandano, L. Osti, M. Pulina, How motivations and satisfaction influence wine tourists' loyalty? An analysis of the Italian case, *Int. J. Cult. Tour. Hosp. Res.* 13(1) (2018) 55–69. doi: [10.1108/IJCTHR-04-2018-0054](https://doi.org/10.1108/IJCTHR-04-2018-0054).
- [76] J. Fountain, S. Charters, L. Cogan-Marie. The real Burgundy: negotiating wine tourism, relational place and the global countryside. *Tour. Geogr.* 23(5-6) (2021) 1116-1136. [10.1080/14616688.2020.1713880](https://doi.org/10.1080/14616688.2020.1713880).
- [77] A. Zatori, M. K. Smith, L. Puczko. Experience-involvement, memorability and authenticity: The service provider's effect on tourist experience. *Tour. Manag.* 67 (2018) 111-126. [10.1016/j.tourman.2017.12.013](https://doi.org/10.1016/j.tourman.2017.12.013)
- [78] A. B. Costello, J. W. Osborne, Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis, *Pract. Assessment, Res. Eval.* (10)7 (2005) 1–9.
- [79] J. F. Hair, W. C. Black, B. J. Babin, R. E. Anderson, *Multivariate Data Analysis*. U.K.: Cenage, 2018.
- [80] E. Ryu, J. Cheong, Comparing indirect effects in different groups in single-group and multi-group structural equation models, *Front. Psychol.* 8 (2017) 747. doi: [10.3389/fpsyg.2017.00747](https://doi.org/10.3389/fpsyg.2017.00747).
- [81] S. S. Bhopal, R. Bhopal, Sex differential in COVID-19 mortality varies markedly by age, *Lancet.* 396(10250) (2020) 532–533. doi: [10.1016/S0140-6736\(20\)31748-7](https://doi.org/10.1016/S0140-6736(20)31748-7).
- [82] I.-J. Park, J. Kim, S. (Sam) Kim, J. C. Lee, M. Giroux, Impact of the COVID-19 pandemic on travelers' preference for crowded versus non-crowd-

- ed options, *Tour. Manag.* (2021) 104398. doi: 10.1016/j.TOURMAN.2021.104398.
- [83] F. Houghton, *Geography, global pandemics & air travel: Faster, fuller, further & more frequent*, *J. Infect. Public Health.* 12(3) (2019) 448–449. doi: 10.1016/j.jiph.2019.02.020.
- [84] M. Cho, M. A. Bonn, R. A. Brymer. A constraint-based approach to wine tourism market segmentation. *J. Hosp. Tour. Res.* 41(4) (2017) 415-444. Doi <https://doi.org/10.1177/1096348014538049>



Citation: Giacomo Del Chiappa, Juan Carlos Martín, Concepcion Román (2022) Developing wine tourism experiences. A discrete choice analysis using best-worst scaling data. *Wine Economics and Policy* 11(1): 107-126. doi: 10.36253/wep-9946

Copyright: © 2022 Giacomo Del Chiappa, Juan Carlos Martín, Concepcion Román. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/wep>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Developing wine tourism experiences. A discrete choice analysis using best-worst scaling data

GIACOMO DEL CHIAPPA¹, JUAN CARLOS MARTÍN^{2,*}, CONCEPCION ROMÁN²

¹ *Department of Economics and Business. University of Sassari & CRENoS, Sassari, Italy. E-mail: gdelchiappa@uniss.it*

² *Institute of Tourism and Sustainable Economic Development (TIDES), University of Las Palmas de Gran Canaria, Las Palmas, Spain; Research in Economic Environs and Society (TREES), North-West University, Potchefstroom, South Africa. E-mail: jcarlos.martin@ulpgc.es; concepcion.roman@ulpgc.es*

*Corresponding author.

Abstract. The aim of this research is to aid winery managers in bundling a plethora of different service features to meet the wine tourists' expectations. A discrete choice model using best-worst scaling (BWS) data is estimated to obtain the relative importance of the attributes included in the analysis. Findings show that the most important aspects that make wineries attractive are: to offer wine tastings and "tour & visits", to provide visitors with wine specialists/tour guides and, finally, to make the surrounding area and natural environment as pleasant as possible. Furthermore, the study highlights that wine tourists' preferences are heterogeneous.

Keywords: wine tourism, Sardinia, choice experiments, Best-Worst Scaling, discrete choice models.

1. INTRODUCTION

Any firm in any sector has to make an effort to fully understand the customer's needs and expectations and to meet them, thus, generating satisfaction and willingness to buy again the product/service and/or to recommend it to others both online and offline.

During the last few decades, wineries around the world have been approaching wine tourism as a valid and effective distribution channel [1], a way to promote the products and to be in close contact with potential customers. Thus, wineries can sustain their national and international sales and market share. Hence, their ability to deeply understand what attracts visitors to wineries and what makes them satisfied has become pivotal both for academia and the industry [2]. According to Victorino et al. [3], the lack of an appropriate combination of the resources with the necessary skills and knowledge impede firms from innovating their products, service and experi-

ences. Innovation is a prerogative that creates value for the customers making them satisfied and loyal [4].

Tseng et al. [5] viewed service innovation as a strategic tool to keep a firm competitive. However, knowledge of consumers' reactions to innovations in traditional and symbolic markets such as wine [6] is still very limited so to anticipate the possible acceptance of such innovations is, in the best of the cases, very risky. Furthermore, especially in wine sector, innovation can be seen as an antagonist of tradition because part of the prior and authentic experience can be in part lost, so such innovation can be a failure in the marketplace [7]. Furthermore, the number of academic studies aimed to investigate which are the main service features that make visitors at wineries satisfied is not such large, tend to apply mostly factor and Structural Equation Model (SEM) analysis [8,9], and tend to ignore Italy [10] despite its relevant role both in term of wine production and wine tourism. Thus, the novelty of the paper is based on two main features: the methodological approach and the case study of Sardinian wine tourism.

Best-worst scaling (BWS) has been found to be an efficient way to elicit taste-based preferences that obtain the key drivers of service provision in different contexts [11]. The method has been applied in different fields such as transportation [12,13]; marketing [14,15] which can be greatly ameliorated by the use of a new technique, best-worst scaling (BWS; health care [16,17]; food industry [18,19]; wine choice in Italy [20]; and tourism [21,22]. Scarpa et al. [22] find that repeated best-worst selection tasks facilitate the cognitive burden of multi-attribute stated preference surveys. Kim et al. [21] contend that BWS has been almost absent in the tourism literature, and it is still unclear why this is the case as there are many topics that could be benefitted from its application. These authors use BWS to identify the most important key drivers that characterize hotel choice under two different scenarios: luxury and economy hotels.

In this paper, the authors transform survey data obtained from the use of traditional semantic scales into a BWS data set with the purpose of analysing the main drivers of customers' preferences for wine tourism. The applied method extracts, from each observation, substantially more information than that obtained by analysing the scores reported by respondents independently. Thus, the present research is an additional case of the scant BWS studies in tourism, and it is expected that the methodology could be applied more frequently in the future since it represents an efficient method to elicit taste-based preferences.

This said, there is a need to deepen our understanding of wine tourism and BWS is an adequate methodo-

logical alternative to achieve this purpose. For this reason, experimental designs to extract BWS datasets, jointly, with advanced discrete choice models estimations are proposed in the study to better delineate the key drivers that develop successful wine tourism products. BWS datasets are free of the biases inherent in traditional response scales and are ideal for handling the comparative evaluation of large amount of indicators which are mostly qualitative in nature [12] (p. 108). This would strongly support wine producers and managers in their attempt to effectively plan and implement their product and service design in ways that their visitors can be satisfied with the visit and prone to return to it and/or to recommend it to others [23,24].

According with existing literature, the product and service design consists of the evaluation of available resources that aims to being innovative and unique [25]. The customer value is obtained through a perfect alignment between the perceived service and the expectations. Hence, wineries need to find the true value drivers differentiating these from those attributes which can be costly to the firm without providing the adequate rate of return. Specifically, wineries need to analyse whether being able to taste the local produced wine, being able to visit the vineyards and the cellar, being able to buy wine, being able to be accommodated, among others, are true value drivers.

Based on the literature review, the paper proposes to design the high-valued winery tourism products based on 29 different attributes used to describe the main operational capabilities of wineries, such as tangible product characteristics, staff attributes and other more affective and emotional attributes. Hence, the aim of this research is twofold. First, it aims to analyze the degree of importance of different attributes that could be considered by visitors when selecting a wine tourism destination. Secondly, it aims to ascertain whether socio-demographic characteristics of visitors (gender, age, place of residency) and travel-related variables (prior experience with visitation at wineries and length of stay) influence their assessment.

To achieve these aims, the study data collected in the period June-September 2015 from a sample of 271 visitors at wineries in the Island of Sardinia (Italy) were used to generate a discrete choice BWS dataset after creating an appropriate experimental design. This allowed us to estimate different choice models in order to obtain the relative importance of the attributes included in the analysis. The flexibility of the modelling strategy followed also enabled us to draw interesting conclusions regarding the heterogeneity in wine-tourists' preferences, which contrast with the traditional method based on the

analysis of sample average scores. Our results provide interesting managerial implications that can be used for promoting wine-tourism in the region.

2. LITERATURE REVIEW

Wine tourism has been previously defined by Charters and Ali-Knight [26] and Getz and Brown [27]. Recently, Sousa [28] extends the definition given in [27] as a simultaneous form of consumer behavior, a destination strategy that develops and markets wine-related attractions, and a marketing opportunity for wineries to educate and to sell wine-related products directly to consumers. Prospective on wine tourism needs to rely on new product development process [29] that consists of six major steps: (1) idea generation; (2) screening; (3) business analysis; (4) concept development; (5) final testing; and (6) commercialization. The current study mainly deals with the fourth step. Ottenbacher and Harrington [30] show that there is a connection between the use, the process and the likelihood success increase. Hjalager [31] contends that the process can also act as a catalyst for improving existing services that increase the product perceived value.

Gómez et al. [32] perform a systematic review of wine tourism research over the period 1995-2014 and found eight different topic areas: (1) wine tourism development; (2) winery and cellar door; (3) wine tourist behavior; (4) wine events and festivals; (5) marketing and promotion; (6) critical success factors; (7) wine tourism models; and (8) education and other. The two most researched topics were wine tourism development (35%) and wine tourist behavior (26%). A further analysis of subtopics revealed that regional development and market segmentation of wine tourists are the most relevant with shares of 19 and 17 percent respectively. Notwithstanding, it seems obvious that these two subtopics are highly related.

Charters and Ali-Knight [26] contend that wine tourism development and market segmentation is usually based on important behavioral aspects of wine tourists such as motivations, expectations and experiences. Quintal et al. [33] further include the push-pull winescape indicators of the hedonic experience to generate a segmentation basis for cluster analysis. In this sense, it is important that push factors could also include travel constraints and impediments. For example, Cho et al. [34] comment that wine tourism market segmentation have not adequately addressed the issues related to travel constraints, barriers or impediments that some tourists might have to not visit wineries. This is an impor-

tant aspect for which wine tourist destination marketing campaigns can be misleading.

Alebaki and Iakovidou [35] compared a number of approaches that have been used to find market segments in wine tourism, analyzing the main indicators included, and found that the psychographic scales are mainly based on the following motivations and wine lifestyles: (1) needs-based motivations, value-based motivations, benefits and expectations; (2) push-pull factors; (3) core wine product, core destination appeal and cultural product; (4) purpose of the winery visit; and (5) wine lifestyles that include wine interest, wine cellaring behavior and wine club participation. Similarly, Molina et al. [36] summarized the psychographic scales as: (1) interest in wine; (2) interest and knowledge in wine; (3) interest in wine and motivation; (4) motivations; (5) sensation seeking; (6) attitudes and behavior; (7) values and lifestyle; and (8) constraints framework.

Festa et al. [37] contend that although wine tourism in Italy is recently achieving recognition in the world, there is still a number of lags on institutional, managerial, and professional developments that impede some Italian destinations of getting its full potential. Wine tourism is offering new niche markets for cellars that can foster micro tourist destination competitiveness [38-40]. The potential synergies between these two industries are gaining the academic attention as a particular region tourism attractiveness can be increased with wine and food products promotion [1,41-43].

Wine tourism products share some commonalities with other agricultural products regarding the perceived value for its provenance associated cultural stories and lineage [44]. The authenticity can be molded by the peculiarities of the grapes type, the blending process, the winescape, the traditions, the feasts, and the ethnography associated to winemakers and growers. The development of wine tourist products and its marketing need to be addressed by well-grounded quantitative studies that help wineries and destination marketers in achieving a successful and innovative product.

Winescape was defined by Peters [45] as “the winsome combination of vineyards, wineries, and supporting activities necessary for modern wine production, [which] yields regions that offer sojourners and dwellers alike a certain charm – a warm ambience, a memorable experience of place – not found in most other agricultural landscapes’ (p. 124).” The definition lacks concreteness on the supporting activities that can be pursued in experiencing the place. Since the seminal winescape definition, a lot of studies have analyzed wine tourism using winescape scales [46-49].

Regarding the methods that have been used to analyze wine tourism development and market segmenta-

tion, as usual in social science, the literature abounds in qualitative, quantitative and mixed methods. Within the category of qualitative studies, we highlight here the work by Frost et al. [44] that uses interpretivism as way to conduct the exploratory analysis. This method consists in putting researchers in the shoes of the interviewees in order to better extract the experiences and opinions on the main attributes of winescape. The authors find that a representative sample of wineries in south east Australia uses heritage as a key marketing component. The heritage concept is promoted via family history, ethnicity, 19th century buildings and vineyards.

Within the category of quantitative methods, cluster analysis is the most popular approach [9,50,51]. For example, Bruwer et al. [50] analyze the relationship between motivations and destination image perception, and find that the visitors can be segmented in five and three different clusters for motivations and destination image, respectively. The wineries are located in in Barossa Valley –South Australia. The motivation clusters are named as wine learners, dining enthusiasts, wine buyers, wine enthusiasts and wine connoisseurs. Curiously, the authors do not name the destination image clusters. Meanwhile, Gu et al. [9] identify four different clusters regarding the involvement level of Chinese tourists who participate in wine tourist routes in Australia, namely, low involvement, highly involved, interest-driven and high-risk perception. And finally, Priilaid et al. [51] perform a cluster analysis to analyze the visitors' interest and engagement in wine consumption and wine education in South Africa's Cape Region. The authors find three clusters, namely, enthusiasts, consumers and explorers.

Other methods, besides the mentioned cluster analysis, that have been used to obtain market segments in wine tourism are the following: tourists' self-classification on the basis of their interest in wine and the knowledge about it [26]; Multiple Correspondence Analysis (MCA) applied to wine tourists' motivations [52]; and latent class segmentation analysis based on interest in wine, motivations and demographic characteristics of tourists [36].

Discrete choice is not as popular as cluster analysis in the research of wine tourism. In a recent literature review, Boncinelli et al. [53] find 35 studies that use choice experiments to analyze consumers' wine preferences. Out of the 35 studies, none of them analyze the consumers' wine preferences in a context of wine tourism. In addition, the category 'occasion' that is the special or usual consumption situation does not include tourism as one of the possible situations, instead more general situations such as at home or with friends are included in the analysis. This fact is very unusual as

wine industry can be considered as a mix of commodity supply, cultural or lifestyle experience, and hospitality or tourism destination [54].

This section ends with the study by Tafel and Szolnoki [55] in which the mixed-methods framework is applied for the first time in wine tourism to a sample of German wineries. The authors conclude that wine tourism is especially successful for those wineries which are located near to large cities. In Germany, wine tourism should reinforce the cultural heritage preservation and strength the economic cohesion of some disadvantaged rural areas. The authors present the mixed-methods approach as more convenient than a quantitative method because of its flexibility to determine the main challenges that wineries are facing. Interestingly, the most important key personal challenge to participate in wine tourism is the lack of human resources which increases the owner workload and labor fatigue.

3. DATA AND METHODOLOGY

3.1 Survey and sample description

The study is based on a questionnaire that was structured into two sections. In the first one, respondents were asked to provide general information about their socio-demographic profile (age, gender, level of education, etc.). The second section asked individuals to assess the extent to which 29 different attributes are important for them when deciding to undertake a wine tourism-related experience at a winery (5-point ordinal scale: 1=not at all important, 5= extremely important). The items were sourced from prior studies [27,56,57].

The questionnaire was originally designed in English and then translated into Italian, French and German. Based on existing literature, different possible methods of translation exist [58]. This study opted for a back translation approach, which is a common approach in tourism-related settings [59]. Hence, the original English questionnaire was translated by bilingual speakers for each language; a translation back to the original language was then performed by other bilingual speakers. This method of back-translation was used for quality assurance, as the target of this research is an international audience.

Once the survey was designed, a pilot study was conducted by two trained students who interviewed face-to-face a sample of 40 visitors at the end of their visit at one of the several Sardinian wineries that kindly agreed to collaborate in the study (15 wineries spread around the overall region). Based on the pilot study small changes were done to further improve the read-

ability and comprehension of some statements included in the survey.

The final data collection was then run face-to-face by 4 interviewers who intercept potential respondents at the end of their visit at the winery for only 10 specific wineries which were selected given the similar characteristics they have, medium and high involvement in wine tourism activities such as guide tours, wine tasting and information brochures. One of the researchers responsible for leading the research team trained the interviewers about when and how to approach visitors and how to support them in filling the survey without interfering in their assessment. Specifically, the interviewers were asked to collect data on different days and time spans of the week intercepting all the visitors and offering them the possibility to voluntarily take part in the study (no prize and/or incentive was offered). The data collection was conducted in the period June-September 2015 and a convenience sample of 271 complete questionnaires was finally obtained.

Table 1 shows the socio-demographic profile of respondents. Overall, it can be seen that the profile of the respondent is characterized by being female, 26-35 years old, non-resident in Sardinia, a frequent visitor to the island, and staying a week or less for the vacation.

3.2 Generation of a choice data set from survey data

In order to analyze which attributes are considered more/less important when deciding to undertake a wine-tourism related experience at a winery, the assessment provided by the 29 attributes included in the survey (see Table 2) was used to generate a best-worst scaling (BWS) case 1 choice data set [60]. For this, we created an efficient choice experiment consisting of 58 choice sets of 4 attributes each. The experimental design was created with the software Ngene [61]. In this regard, it is important to note that for 29 attributes, it is not possible to build a balanced incomplete block design (BIBD) because no solution can be found for those cases where the necessary conditions of design parameters are met [11].

For each particular choice set in the experiment, the most important attribute (best option) was considered the one that obtained the highest score in the survey. In the same fashion, the least important one (worst option) was that with the lowest score. In case two or more attributes were rated with the highest/lowest score, the most/least important one was selected randomly. Also, when obtaining the least important attribute, the one considered the most important, was removed from the choice set. Following this procedure, we were able to generate, for every respondent, a total of 116 choice observa-

Table 1. Socio-demographic profile of the wineries visitors.

Variable	Category	N	Percent
Gender	Male	125	46.13
	Female	143	52.77
Age	<=25	26	9.59
	26-35	73	26.94
	36-45	59	21.77
	46-55	57	21.03
	56-65	23	8.49
	>=66	16	5.90
Sardinia Residence	Resident	74	27.31
	Non-resident	197	62.96
Visits	1	13	4.80
	2	33	12.18
	3	29	10.70
	4	19	7.01
	5	24	8.86
	6-9	12	4.43
	10 or more	55	20.30
Vacation length	<=7 days	84	31.00
	8-14 days	59	21.77
	15-21 days	44	16.24
	>=22 days	18	6.64

tions (58 for most important and 58 for least important responses) which provide valuable information regarding how the individual makes trade-offs among different attributes. This makes a total of 31436 choice observations that will be used during the estimation process to determine the relative impact of each attribute on the overall importance function. The typical BWS choice question as presented in Figure 1 corresponds to the first choice scenario in our experiment. Hence, if a respondent gave the scores of 2,4,5, and 3 to the attributes shown in this choice set, the best choice (i.e. the most important one) was assigned to that showed in the third place, whilst the worst one (i.e. the least important) to that showed in the first place, considering the three remaining options. In the example of Figure 1, the information provided by the respondent in the importance table is transformed in the choice task indicating that the attribute shown in third place is more important than those presented in the first, second and fourth position. Additionally, the attributes shown second and fourth are considered more important than the one presented first. Therefore, the information extracted from the translation of the answers given for the importance of the 29 attributes was transformed in each of the choice tasks included in the whole set of the 58 choice tasks.

Table 2. Attributes included in the analysis.

Number	Name
1	To be able to taste the wines produced at wineries
2	Being able to visit wineries
3	The visiting hour of the wineries are long/extended
4	Being able to buy the wines produced at the wineries
5	Having wine specialists take care of you during visits
6	The existence of specific gastronomic activities
7	The existence of a varied gastronomic offer
8	The possibility of eating at the wineries
9	The existence of organised trips (lodging, visit, tasting, etc.)
10	The existence of specific lodging
11	The existence of sports activities in the area
12	The appeal of the natural environment in the area
13	The existence of organised wine tourism trips
14	The area to be visited is famous for its wines
15	The fame of the wine in the region
16	The existence of well-defined wine routes in the region
17	The climate of the area
18	The existence of specific gastronomic activities
19	The existence of a varied gastronomic offer
20	The possibility of participating in cultural tourism in the area
21	The existence of stores/open-air markets for agricultural products from the area
22	The existence of stores/open-air markets for artisan products from the area
23	The possibility of taking wine tasting courses
24	Being able to increase my knowledge of wine
25	The possibility of participating in wine production activities
26	Meeting the winery owners
27	The existence of activities for children
28	The existence of wine museums or exhibitions
29	The existence of leisure/wine therapy activities

Efficient choice experiments represent the appropriate tool to obtain choice data sets that enable reliable parameter estimates with smaller sample size. This is a very convenient method as, normally, the number of tasks required to obtain all combinations of attributes is unfeasibly large. Efficient designs are based on the minimization of some efficiency measure, typically the D-error, which is derived from the asymptotic variance-covariance matrix and some prior information about the parameter estimates [62]. In our case, parameter priors were obtained from the estimation of a multinomial logit model that used a data set generated in the same fashion described above, but considering, for each respondent, 50 sets of 4 attributes were selected at random.

Which attributes, from the list below, do you consider most and least important in the selection of a wine tourism destination?		
Most important		Least important
<input type="checkbox"/>	The existence of specific lodging	<input type="checkbox"/>
<input type="checkbox"/>	The existence of well-defined wine routes in the region	<input type="checkbox"/>
<input type="checkbox"/>	The existence of activities for children	<input type="checkbox"/>
<input type="checkbox"/>	To be able to taste the wines produced at wineries	<input type="checkbox"/>

Figure 1. Best-Worst choice scenario.

The design obtained is characterized by twenty-four attributes appearing eight times in the choice questions, three appearing seven times, one appearing nine times, and one appearing ten times. The number of times each attribute is paired with each other is zero in 32% of the pairs, one in 52% of the pairs and two in 16% of the pairs.

It is worth noting that Figure 1 was not really presented to respondents, and it is simply used for the ease of exposition of the approach used to construct BWS data using the information provided in the table of importance for the 29 attributes included in the survey. The degree of similitude between results obtained from applying the described method and those obtained when individuals face real best-worst tasks must be empirically tested. Unfortunately, this comparison is not possible in this study, as the survey was not prepared to include a best-worst choice experiment. Therefore, the analysis of the robustness of the method proposed is out of the scope of the current study and is left for future research.

4. THE ECONOMETRIC MODEL

Once survey data were transformed into choice data, it is possible to build a discrete choice model under the random utility maximization framework [63]. In our case, the alternative j makes reference to the position within the choice task. (first, second, third and fourth). Thus, the utility U_{jks} for the importance question associated with the alternative j for individual q in choice task s is represented by:

$$U_{jks} = \alpha_j + \sum_{k=1}^K \beta_k D_{jqsk} + \varepsilon_{jqsk} \quad (1)$$

Where α_j is the alternative specific constant that accounts for not measured effects; β_k is the marginal utility or the importance, in this case, associated to the

k th attribute; D_{jqsk} is a dummy variable taking the value 1 if the attribute k is present in alternative j for individual q in choice scenario s and 0 otherwise; and ϵ_{jq_s} is a vector of random terms independently and identically distributed type I extreme value, yielding a standard Multinomial Logit Model (MNL). As in this case we have 29 attributes, only $K=28$ dummy variables are generated, and the attribute represented by the statement 29 is used as the reference attribute. Thus, in the first choice scenario ($s=1$) presented in Figure 1, the attributes number 10, 16, 27 and 1 are included in the first, second third and fourth alternatives, respectively. In this regard, for example, in the utility of the first alternative ($j=1$) for individual q , D_{jqsk} will be equal to 1 for $k=10$ and 0 for $k \neq 10$. Data from least important tasks are simply generated by coding variables D_{jqsk} as -1 if the attribute is present in the alternative and 0 otherwise. Note that the minimum utility option is obtained after the maximization of the negative of the utilities of the remaining options, once the most preferred alternative (i.e. the most important attribute) is removed from the choice set.

We will further assume that the marginal utilities corresponding to most and least important tasks are identical, except for scale differences. In order to account for this potential differences, a scale factor term is included in equation (1), yielding:

$$U_{jks} = \exp(\lambda_w W) (\alpha_j + \sum_{k=1}^K \beta_k D_{jqsk}) + \epsilon_{jq_s} \quad (2)$$

Where, $W=1$ if the observation comes from a worst choice task.

The modelling approach is based on that used by [12] when analyzing the importance and satisfaction of public transport attributes in Australia.

Considering that a choice scenario s has J alternatives, the probability that alternative i is chosen as best and $r, r \neq i$ is chosen as worst for individual q in choice scenario s is:

$$P_{qs}^{ir} = \frac{e^{V_{iqs}}}{\sum_{j=1}^J e^{V_{jq_s}}} \cdot \frac{e^{-V_{rqs}}}{\sum_{j=1, j \neq i}^J e^{-V_{jq_s}}} \quad (3)$$

Where V is the systematic component (i.e., the non-random term) of the utility in equation (2). This model assumes that best-worst choices are made sequentially and is referred in the literature as best then worst MNL model [64]. The model also assumes that the utility of an alternative in selecting the worst option is the negative

of the utility of the same alternative in selecting the best option, except for potential differences in scale.

One of the main drawbacks of the MNL model is the inability to analyze random taste heterogeneity in the population. Thus, model parameters are interpreted as point estimates of the marginal utilities for a homogenous population.

Models of the family of Mixed Logit [65] allow for the analysis of the random taste heterogeneity by specifying random coefficients in the utility function. For the purpose of our analysis, the normal distribution was considered. Thus, coefficients in expression (1) are expressed as $\beta_k = \mu_k + \sigma_k \eta_k$, where μ_k and σ_k are parameters to estimate, representing the population mean and standard deviation, respectively; and η_k is a Standard Normal distributed random variable. Systematic heterogeneity in the population parameters can also be accounted for by specifying interactions with some set of covariates V_r , such as socio-demographic and contextual variables. In our case the heterogeneity in mean is considered. Hence, coefficients are expressed as $\beta_k = \mu_k + (\sum \mu_{kr} V_r) + \sigma_k \eta_k$ where μ_{kr} are parameters to estimate, characterizing the heterogeneity in mean of the random coefficient in the population.

As we were focused in analyzing how the visitors profile could affect the perception of the different attributes, some socio-demographic variables, as well as character-

Table 3. Covariates used in the analysis.

Name	Variable	Scale
V1	I am interested in wine and in the activities related to it	likert 1-5 1= strongly disagree,... ,5=strongly agree
V2	The possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia	likert 1-5 1= strongly disagree,... ,5=strongly agree
V3	I frequently read magazines that are specialized in wines	likert 1-5 1=strongly disagree,...,5 strongly agree
V4	Gender	1 male, 0 female
V5	Age	1 = "<= 25"; 2 = "26-35"; 3 = "36-45"; 4 = "46-55"; 5 = "56-65"; 6 = ">= 66"
V6	Prior experience	1 First visit, 0 otherwise 1 = "<= 7 days"; 2 = "8-14 days"
V7	Length of stay	3 = "15-21 days" 4 = ">=22 days"
V8	Place of residency	1 Resident in Sardinia, 0 otherwise

istics of the visit, and the interest in wine related activities were included in the set of covariates. The final list of variables used in our models is presented in Table 3.

5. ESTIMATION, RESULTS AND DISCUSSION

During the modelling process, different discrete choice models were built. In a first stage, two multinomial Logit models were estimated. The first (MNL1) considers the utility specification defined in (1). In this case best and worst choices are treated identically. In the second one (MNL2), a scale factor for worst choices is estimated, according to equation . As can be inferred from the estimates presented in Table A1 in the statistical annex, all parameters resulted significant at the 99% confidence level, with the only exception of that of the attribute 27 “*The existence of activities for children*”. It is worth noting that this result should not be interpreted as this attribute is not considered important by the winery visitors, but rather its value is not significantly different from the base statement “*The existence of leisure/wine therapy activities*”, that is coded as 0. In the same fashion, positive and negative estimates are interpreted as being more and less important than those equal to 0, respectively.

In order to facilitate the comparison of our estimates with the average score obtained for each item, results were re-scaled between 0 and 1 by considering the difference between each estimate and the minimum value and dividing the result by the value range. As can be inferred from results presented in Table 4, the top and bottom 5 rated items coincide in the same set of attributes, independently on the method used. Thus, the attributes considered more important lie among the group 1,2,4,5, and 12, which are more related to the visit to winery; whilst the less important ones lie in the group of attributes number 10,11,27,28 and 29, which are referred to the existence of certain type of facilities in the area.

A different method to avoid the confounding effect due to differences in scale is the obtaining of the share of preference, SP_k , for each attribute k . They predict the probability that each attribute is chosen as the most important using the following expression [66]:

$$SP_k = \frac{e^{\beta_k}}{\sum_{r=1}^K e^{\beta_r}} \quad (4)$$

The share of preference for the attributes considered in the analysis are presented in Table 4. It is worth noting that this normalization method yields the same

ordering of the attributes than the previous re-scaling method.

Even considering that results are rather similar, there exist differences in the rank order obtained by the average score method and the multinomial logit models, as can be seen in the spearman correlation matrix presented in Table 5, where the highest discrepancy is obtained for the average score and the MNL1 model. In this respect, it is important to point out that this analysis is not based on data obtained by a really best-worst survey where individuals evaluate each item in comparison with the other ones presented in the choice set. Therefore, this potential source of differences provided by the relative comparison of the attributes is not considered in our analysis. These differences have been manifested in similar analyses carried out by other authors in other context [12].

An important advantage of using discrete choice modelling is the potential of this methodology to deal with preference heterogeneity [67]. Thus, in the second stage of the modelling process, different random parameter logit models were tested in order to determine the group of attributes that were heterogeneously perceived by the population. In this regard, after testing different specifications, the coefficients of attributes number 2, 4, 5, 12, 17 and 22 were found to be random, following the Normal distribution. These attributes are: Being able to visit wineries, being able to buy the wines produced at the winery, having wine specialists take care of you during visits, the appeal of the natural environment in the area, the climate of the area and the existence of stores/open-air markets for artisan products from the area. The heterogeneity found for these attributes have important managerial implications that will be discussed below. To further explore other sources of heterogeneity, the means of these random coefficients were interacted with some of the covariates presented in Table 3.

The estimation results corresponding to the model with the better fit are presented in Table A2 in the annex. The majority of the estimates resulted significant at the 95% confidence level. The only exceptions were the fixed coefficient for attribute 27 (“*The existence of activities for children*”) and the interaction of the mean for the coefficient of attribute 5 (“*Having wine specialists take care of you during visits*”) with covariate V7 (“*Vacation length*”). The sign obtained for these interaction terms help us to interpret the meaning of the heterogeneity in the population mean for these random coefficients. The statements presented in Table 6 summarize this interpretation. Thus, for example, the importance of attribute 2 “*being able to visit wineries*” is higher for males (note that the coefficient μ_{D2*V4} for the interaction term $D2*V4$

Table 4. Re-scaled results and share of preference. Multinomial Logit models.

Attribute	Average score	MNL1	MNL2	Share of preference	
				MNL1	MNL2
1 To be able to taste the wines produced at wineries	1.000	0.966	0.978	0.076	0.089
2 Being able to visit wineries	0.890	0.997	0.986	0.083	0.092
3 The visiting hour of the wineries are long/extended	0.625	0.763	0.796	0.042	0.042
4 Being able to buy the wines produced at the wineries	0.891	1.000	1.000	0.084	0.097
5 Having wine specialists take care of you during visits	0.844	0.919	0.945	0.066	0.077
6 The existence of specific gastronomic activities	0.639	0.692	0.736	0.034	0.032
7 The existence of a varied gastronomic offer	0.570	0.623	0.693	0.028	0.027
8 The possibility of eating at the wineries	0.473	0.545	0.618	0.022	0.020
9 The existence of organised trips (lodging, visit, tasting, etc.)	0.448	0.618	0.662	0.027	0.024
10 The existence of specific lodging	0.390	0.503	0.568	0.019	0.016
11 The existence of sports activities in the area	0.000	0.000	0.000	0.004	0.002
12 The appeal of the natural environment in the area	0.697	0.851	0.878	0.054	0.058
13 The existence of organised wine tourism trips	0.493	0.572	0.638	0.024	0.022
14 The area to be visited is famous for its wines	0.405	0.642	0.681	0.029	0.026
15 The fame of the wine in the region	0.502	0.624	0.683	0.028	0.026
16 The existence of well-defined wine routes in the region	0.485	0.585	0.627	0.025	0.021
17 The climate of the area	0.485	0.699	0.719	0.034	0.030
18 The existence of specific gastronomic activities	0.503	0.712	0.729	0.036	0.031
19 The existence of a varied gastronomic offer	0.533	0.709	0.724	0.035	0.031
20 The possibility of participating in cultural tourism in the area	0.572	0.634	0.676	0.028	0.025
21 The existence of stores/open-air markets for agricultural products from the area	0.525	0.729	0.760	0.038	0.036
22 The existence of stores/open-air markets for artisan products from the area	0.485	0.648	0.710	0.030	0.029
23 The possibility of taking wine tasting courses	0.512	0.509	0.612	0.020	0.019
24 Being able to increase my knowledge of wine	0.661	0.678	0.741	0.032	0.033
25 The possibility of participating in wine production activities	0.599	0.719	0.763	0.037	0.036
26 Meeting the winery owners	0.550	0.619	0.700	0.027	0.028
27 The existence of activities for children	0.115	0.344	0.416	0.012	0.009
28 The existence of wine museums or exhibitions	0.339	0.459	0.541	0.017	0.014
29 The existence of leisure/wine therapy activities	0.140	0.323	0.393	0.011	0.008

Top 5
Bottom 5

Table 5. Spearman correlation matrix.

	Average score	MNL1	MNL2
Average score		0.85	0.90
MNL1			0.98
MNL2			

is positive), decreases as the age of the visitor increases ($\mu_{D2 \cdot V5}$ is negative) and decreases as the individual agrees more with “the possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia” (note that $\mu_{D2 \cdot V2}$ is negative). The other interaction terms can be interpreted in the same fashion.

A similar interpretation can be done if the focus is put on the different covariates. In this regard, the higher agreement with “I am interested in wine and in activities related to it” (i.e. an increase in V1) impacts negatively upon the importance of “The climate of the area” and “The existence of stores/open-air markets for artisan products from the area”. A negative impact on the importance of climate is also appreciated for those with a higher agreement with “I frequently read magazines that are specialized in wines” (V3). Also, a higher agreement with “the possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia” (V2) reduces the importance given to “Being able to visit wineries”, “Being able to buy the wines produced at the wineries”, “Having

wine specialists take care of you during visits” and “The appeal of the natural environment in the area”; and in contrast, increases the importance given to “The climate of the area” and “The existence of stores/open-air markets for artisan products from the area”. This group of individuals seems to be sufficiently motivated to travel to Sardinia simply by the fact of being able to visit the wineries and not so much by the services and activities offered inside them.

Regarding the socioeconomic profile, males and older people (V4 and V5) tend to put more importance on “Being able to visit wineries”, as well as on “The climate of the area”; and males give less importance to the “The existence of stores/open-air markets for artisan products from the area”.

The increase in the duration of the holidays (V7) and being a resident in Sardinia (V8) impact both neg-

atively on the importance of “Having wine specialists take care of you during visits”; and a longer holiday also reduces the importance of “The existence of stores/open-air markets for artisan products from the area”.

The estimation of random coefficients in mixed logit models allows for the application of Bayesian statistics to obtain individual level parameters for these random coefficients [65]. The graphs, depicted in Figure 2, represent the kernel density estimates for the distribution of the marginal importance of these random coefficients, with the corresponding confidence interval. In all cases, the distributions present a moderate dispersion, confirming the existence of random heterogeneity in the perception of the attributes, being this higher for the upper bound distributions of the confidence intervals.

Finally, and in order to compare these results with those obtained for the MNL specifications, the share of

Table 6. Interpretation of the heterogeneity in mean.

The mean of the importance of	Being able to visit wineries	decreases	as	the degree of agreement with “the possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia”	increases
		increases	for		males
		decreases	as		increases
		increases	for		age
The mean of the importance of	Being able to buy the wines produced at the winery	decreases	as	the degree of agreement with “the possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia”	increases
		increases	for		those who are from Sardinia
The mean of the importance of	Having wine specialists take care of you during visits	decreases	as	the degree of agreement with “the possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia”	increases
		decreases	as		vacation Length
		decreases	for		those who are from Sardinia
The mean of the importance of	The appeal of the natural environment in the area	decreases	as	the degree of agreement with “the possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia”	increases
The mean of the importance of	The climate of the area	decreases	as	the degree of agreement with “I am interested in wine and in the activities related to it”	increases
		increases	as	the degree of agreement with “the possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia”	increases
		decreases	as	The degree of agreement with “I frequently read magazines that are specialized in wines”	increases
		increases	for	males	
		increases	as	age	increases
The mean of the importance of	The existence of stores/open-air markets for artisan products from the area	decreases	as	the degree of agreement with “I am interested in wine and in the activities related to it”	increases
		increases	as	the degree of agreement with “the possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia”	increases
		decreases	for	males	
		decreases	as	vacation Length	increases

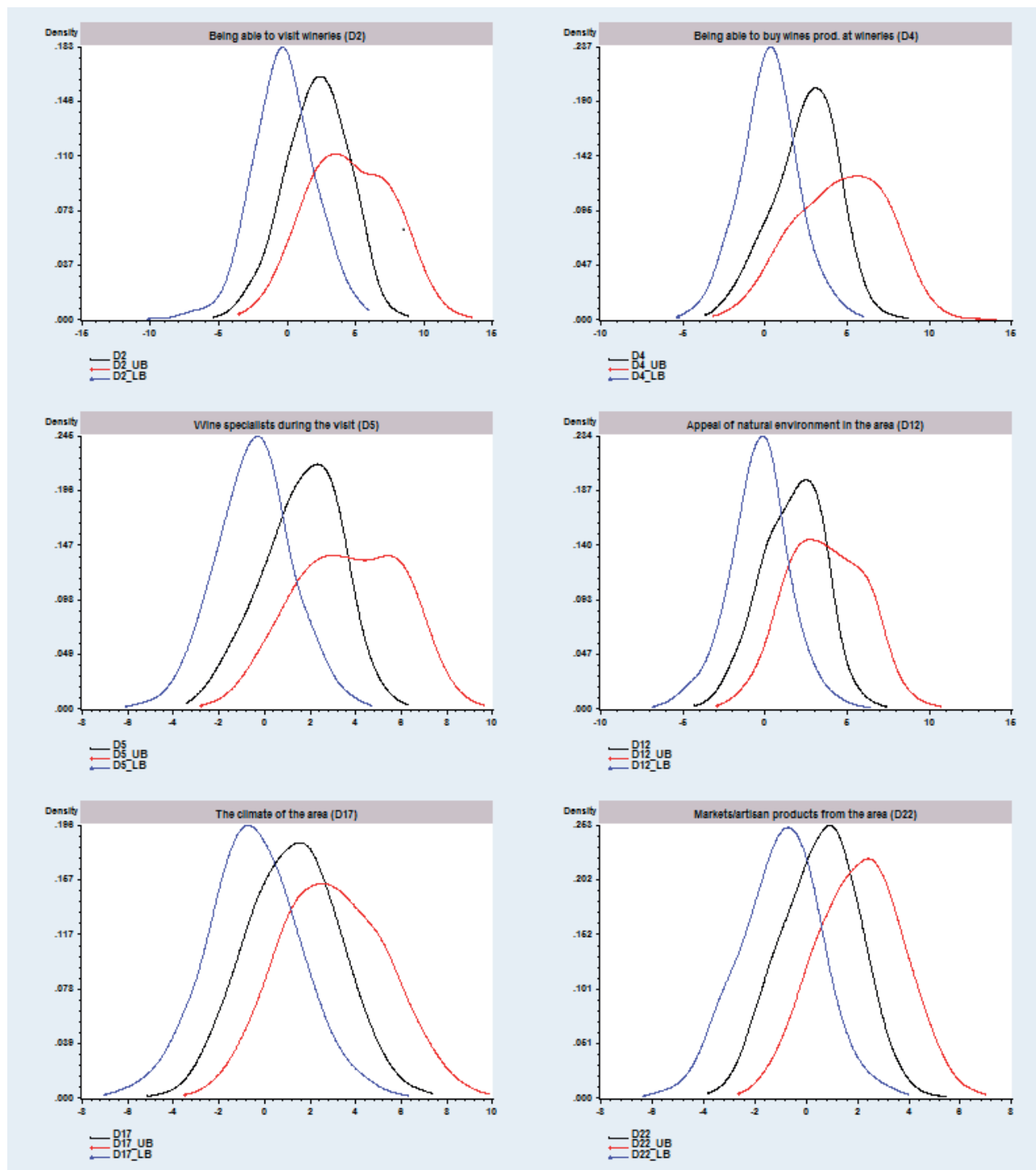


Figure 2. Distribution of random coefficients. Kernel density estimates.

preferences has been obtained for the random parameter Mixed Logit model.

In this case, as we have obtained individual-specific posterior estimates for the mean and standard deviation

of the random coefficients, the share of preference has been obtained at the individual level using the posterior mean of the parameter (conditional on individual current choices) for each individual and then averaging the

results in the sample. Results presented in Table 7 are very similar, in terms of the rank order of importance, to those obtained for the MNL models yielding high Spearman correlation values (0.95 for MNL1 and 0.96 for MNL2).

5.1 Managerial implications

The previous literature on wine tourism agrees in that to effectively develop wine tourist products is necessary to analyze visitors' preferences regarding the attributes that conform the wine tourism experience, as well as the individual factors that foster or limit the participation on the market. Despite interest in wineries research has increased, insights into the importance of the attributes that drive more successful tourist products

need to be further deepened. This is particular evident when the specific context of Italy is considered; in fact, despite Italy can be considered one of the world countries with more well-known wine tourism destinations, the number of studies that analyze the wine tourism markets in Italy is not aligned with the number of existing wineries that offer wine tourist products [68]. This study was therefore carried out to extend the existing knowledge on how to develop this type of products taking into account the important heterogeneity that exists.

Overall, our findings show that there are six attributes that are estimated as random parameters which serve to conclude that there exist heterogeneous market segments that need to be further scrutinized in order to develop satisfying wine tourist experiences. The six attributes are: (1) being able to visit wineries; (2) being

Table 7. Share of preference. Random parameter Mixed Logit model.

Attribute	RP Mixed Logit Model	
1	To be able to taste the wines produced at wineries	0.1003
2	Being able to visit wineries	0.1385
3	The visiting hour of the wineries are long/extended	0.0371
4	Being able to buy the wines produced at the wineries	0.1355
5	Having wine specialists take care of you during visits	0.0561
6	The existence of specific gastronomic activities	0.0304
7	The existence of a varied gastronomic offer	0.0216
8	The possibility of eating at the wineries	0.0142
9	The existence of organised trips (lodging, visit, tasting, etc.)	0.0180
10	The existence of specific lodging	0.0126
11	The existence of sports activities in the area	0.0022
12	The appeal of the natural environment in the area	0.0700
13	The existence of organised wine tourism trips	0.0147
14	The area to be visited is famous for its wines	0.0157
15	The fame of the wine in the region	0.0200
16	The existence of well-defined wine routes in the region	0.0174
17	The climate of the area	0.0723
18	The existence of specific gastronomic activities	0.0237
19	The existence of a varied gastronomic offer	0.0248
20	The possibility of participating in cultural tourism in the area	0.0206
21	The existence of stores/open-air markets for agricultural products from the area	0.0228
22	The existence of stores/open-air markets for artisan products from the area	0.0233
23	The possibility of taking wine tasting courses	0.0139
24	Being able to increase my knowledge of wine	0.0272
25	The possibility of participating in wine production activities	0.0265
26	Meeting the winery owners	0.0187
27	The existence of activities for children	0.0062
28	The existence of wine museums or exhibitions	0.0103
29	The existence of leisure/wine therapy activities	0.0056
	<i>Top 5</i>	
	<i>Bottom 5</i>	

able to buy the wines produced at the winery; (3) having wine specialists take care of you during visits; (4) the appeal of the natural environment in the area; (5) the climate of the area; and (6) the existence of stores/open-air markets for artisan products from the area. These results are similar to those obtained by Bruyer et al. [50] and Kim et al. [69], in which the core wine destination components were tasting wine, winery visits and natural landscape.

However, the findings on heterogeneity extend the knowledge that exists in the development of tourist winery products as all the stakeholders involved in the development of wine tourist products in Sardinia need to be aware that a unique solution that fits all consumers' expectations is unlikely to exist. This important conclusion is achieved by estimating a discrete choice model based on BWS data with rigorous models that account for random and systematic heterogeneity.

It is interesting to see that winery managers could have directly under their control five out of the set of the six attributes mentioned above. The climate is the only attribute which can be considered as a natural endowment of the region and escape from the direct control of the managers. In addition, destination marketers in Sardinia could be at least especially helpful in the attributes 3, 4 and 6. In this respect, Sardinia could develop an educational program that provides enough skills to those in charge of the winery visits. The educational programs to improve the skills of winery visit guides should not only be developed for those already winery workers but also for the future entrants. The idea is to develop a cohesive standard program that allows guides to deliver authentic and unforgettable experiences in the winery. Given the heterogeneity nature of the attribute, it is highly recommended that the visits could be tailored to visitors' preferences. Duarte-Alonso and Kok [70] identify the main traits and features of the future professionals in charge of providing experiences in wineries.

Regarding the sixth attribute, the existence of stores/open-air markets for artisan products from the area, it would be interesting to explore the possibilities of a concerted effort between different stakeholders that include wineries, hotels, local food industry, craft artisans in Sardinia as well as Tourist Sardinian Board. In this regard, some municipalities in Sardinia are organizing wine and food festivals throughout the year, and this trend should be even reinforced by the most important wineries of the island.

On the other hand, winery managers and policy makers do not need to focus in the following five attributes: (1) The existence of specific lodging; (2) The exist-

ence of sports activities in the area; (3) The existence of activities for children; (4) The existence of wine museums or exhibitions; and (5) The existence of leisure/wine therapy activities. It is interesting to highlight that the results show that the core wine attributes are the most important to potential visitors instead of other complementary offer that can be developed in the wineries or the destination. This suggests that investments in complementary offer like sport, lodging, children's activities, museums and therapies might not be a wise strategy, and the respective stakeholders, destination policy makers and marketers as well as winery managers should be aware of this.

The above results contrast highly with those mentioned in Back et al. [71] because the authors analyze the winery Marqués de Riscal in La Rioja (Spain) which is well-known in the sector for developing an iconic post-modernist hotel designed by the renowned Canadian architect Frank Gehry as part of a broad wine tourist development named "City of Wine". The Marqués de Riscal project also included a wine-therapy spa, two restaurants and conference and events facilities. In summary, a complementary offer that was not positively valued by the current wine tourist demand in Sardinia.

Furthermore, the interaction of other eight covariates serve to measure how the heterogeneity is affected by other attitude variables towards wine in general and other socio-demographic variables. In this case, eight covariates are found to have an effect. Thus, there are three attitudinal variables regarding wine: (1) I am interested in wine and in the activities related to it; (2) the possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia; and (3) I frequently read magazines that are specialized in wines. In addition, there are five socio-demographic covariates: (1) Gender; (2) Age; (3) Prior experience; (4) Length of stay; and (5) being a Sardinian resident or a domestic/international traveler.

Results suggest that the development of wine tourist products needs to take into account not only the attributes under the winery control but also the visitors' attitude towards wine in general and other important segmentation covariates in order to match potential visitors' preferences. For example, the existence of stores/open-air markets for artisan products from the area which could engage visitors with complementary products providing an incentive to visit wineries [57] is found in Sardinia to be negatively affected by being interested in wine and in the related activities to it, by being male and by having a longer vacation duration; the first result confirms prior studies [72].

6. CONCLUSIONS

The findings are significant for researchers, wine producers and managers. On the one hand, they provide further theoretical and methodological insights into the scientific debate devoted to analyze how different service features need to be bundled to design and to run an effective service/experience winery product that is able to please the visitors' expectations and needs.

From a managerial point of view, our findings provide useful information to destination marketers, policy makers, wine producers and managers attempting to deep their knowledge about the most relevant visitors' expectations and needs so that the information can be used to plan and run marketing and promotion campaigns also recognizing the nuances in the way these expectations/needs changed based on the socio-demographic characteristics of their guests and their travel-related variables. For example, our findings show that visitors travelling in Sardinia as authentic wine lovers identify as critical aspects for the visit the climate of the area and the complementary offer of local artisan stores and open-air markets. Thus, this niche market should not be promoted with other attributes like the possibility of buying wine during the visit, the natural landscape or having wine specialist during the visit. Similarly, winery products based on the appeal of the natural environment in the area is not found to have a positive interaction with any segmentation variable so the attribute should not be included in the promotional brochures. Thus, we extend the results obtained by Bruwer and Lesschaeve [73] in which winescape construct is analyzed integrating three theoretical concepts, namely servicescape, destination choice and place-based marketing theories. In the case of the Niagara Peninsula Wine Region, the authors suggest that managerial efforts should promote the area with equilibrated messages between "the core wine tourism product elements such as wine tasting and/or buying and the hedonic experience elements (p. 625)." The authors conclude that the promotional material needs to be based in sound scientific approach.

Although this study helps to fill a gap in the existing knowledge in the literature and proposes some implications for practitioners, limitations still remain. Firstly, it is based on a convenience sample and is highly site specific (i.e. Sardinia, Italy), thus rendering hardly generalizable. Future studies might replicate the study in other wine tourism destinations to verify the robustness and generalizability of our findings taking into account the concerns expressed by one of the reviewers. In this sense, it is necessary to analyse whether the results of the current approach are robust in comparison with the

real best-worst choice experiments. Furthermore, this study considered a limited set of socio-demographics and travel-related variable. Future studies might consider widening the set of these variables and ascertain their moderator effect on visitors' expectations and needs (e.g., travel party). In a similar vein, future studies could also consider the moderating effect exerted by other psychographic variables (e.g. personality, life style, etc.).

REFERENCES

- [1] Bruwer, J.; Alant, K. The hedonic nature of wine tourism consumption: An experiential view. *Int. J. Wine Bus. Res.* **2009**, *21*, 235–257, doi:10.1108/17511060910985962.
- [2] Peris-Ortiz, M.; Del Río Rama, M. de la C.; Rueda-Armengot, C. *Wine and tourism: A strategic segment for sustainable economic development*; Springer: Heidelberg, 2015; ISBN 9783319188577.
- [3] Victorino, L.; Verma, R.; Plaschka, G.; Dev, C. Service innovation and customer choices in the hospitality industry. *Manag. Serv. Qual.* **2005**, *15*, 555–576, doi:10.1108/09604520510634023.
- [4] Sidali, K.L.; Kastenholz, E.; Bianchi, R. Food tourism, niche markets and products in rural tourism: combining the intimacy model and the experience economy as a rural development strategy. *J. Sustain. Tour.* **2015**, *23*, 1179–1197, doi:10.1080/09669582.2013.836210.
- [5] Tseng, M.-L.; Lin, Y.H.; Lim, M.K.; Teehankee, B.L. Using a hybrid method to evaluate service innovation in the hotel industry. *Appl. Soft Comput.* **2015**, *28*, 411–421, doi:10.1016/j.asoc.2014.11.048.
- [6] Meillon, S.; Urbano, C.; Guillot, G.; Schlich, P. Acceptability of partially dealcoholized wines - Measuring the impact of sensory and information cues on overall liking in real-life settings. *Food Qual. Prefer.* **2010**, *21*, 763–773, doi:10.1016/j.foodqual.2010.07.013.
- [7] Qesja, B.; Crouch, R.; Quester, P. Product innovation and authenticity : the case Product innovation and authenticity : The case of wine. *Wine Vitic. J.* **2016**, *31*, 67–69.
- [8] Brown, G.P.; Havitz, M.E.; Getz, D. Relationship between wine involvement and wine-related travel. *J. Travel Tour. Mark.* **2006**, *21*, 31–46, doi:10.1300/J073v21n01_03.
- [9] Gu, Q.; Qiu Zhang, H.; King, B.; Huang, S. (Sam) Wine tourism involvement: a segmentation of Chinese tourists. *J. Travel Tour. Mark.* **2018**, *35*, 633–648, doi:10.1080/10548408.2017.1401031.

- [10] Canovi, M.; Pucciarelli, F. Social media marketing in wine tourism: winery owners' perceptions. *J. Travel Tour. Mark.* **2019**, *36*, 653–664, doi:10.1080/10548408.2019.1624241.
- [11] Louviere, J.J.; Flynn, T.N.; Marley, A.A.J. *Best-worst scaling: Theory, methods and applications*; Cambridge University Press: Cambridge (UK), 2015;
- [12] Beck, M.J.; Rose, J.M. The best of times and the worst of times: A new best-worst measure of attitudes toward public transport experiences. *Transp. Res. Part A Policy Pract.* **2016**, *86*, 108–123, doi:10.1016/j.tra.2016.02.002.
- [13] Echaniz, E.; Ho, C.Q.; Rodriguez, A.; dell'Olio, L. Comparing best-worst and ordered logit approaches for user satisfaction in transit services. *Transp. Res. Part A Policy Pract.* **2019**, *130*, 752–769, doi:10.1016/j.tra.2019.10.012.
- [14] Cohen, E. Applying best-worst scaling to wine marketing. *Int. J. Wine Bus. Res.* **2009**, *21*, 8–23, doi:10.1108/17511060910948008.
- [15] Louviere, J.; Lings, I.; Islam, T.; Gudergan, S.; Flynn, T. An introduction to the application of (case 1) best-worst scaling in marketing research. *Int. J. Res. Mark.* **2013**, *30*, 292–303, doi:10.1016/j.ijresmar.2012.10.002.
- [16] Flynn, T.N.; Louviere, J.J.; Peters, T.J.; Coast, J. Best-worst scaling: What it can do for health care research and how to do it. *J. Health Econ.* **2007**, *26*, 171–189, doi:10.1016/j.jhealeco.2006.04.002.
- [17] Rankin, L.; Fowler, C.J.; Stålnacke, B.M.; Gallego, G. What influences chronic pain management? A best-worst scaling experiment with final year medical students and general practitioners. *Br. J. Pain* **2019**, *13*, 214–225, doi:10.1177/2049463719832331.
- [18] Caputo, V.; Lusk, J.L. What agricultural and food policies do U.S. consumers prefer? A best-worst scaling approach. *Agric. Econ.* **2020**, *51*, 75–93, doi:10.1111/agec.12542.
- [19] Jaeger, S.R.; Jørgensen, A.S.; Aaslyng, M.D.; Bredie, W.L.P. Best-worst scaling: An introduction and initial comparison with monadic rating for preference elicitation with food products. *Food Qual. Prefer.* **2008**, *19*, 579–588.
- [20] Casini, L.; Corsi, A.M.; Goodman, S. Consumer preferences of wine in Italy applying best-worst scaling. *Int. J. Wine Bus. Res.* **2009**, *21*, 64–78, doi:10.1108/17511060910948044.
- [21] Kim, B.; Kim, S. (Sam); King, B.; Heo, C.Y. Luxurious or economical? An identification of tourists' preferred hotel attributes using best-worst scaling (BWS). *J. Vacat. Mark.* **2019**, *25*, 162–175, doi:10.1177/1356766718757789.
- [22] Scarpa, R.; Notaro, S.; Louviere, J.; Raffaelli, R. Exploring scale effects of best/worst rank ordered choice data to estimate benefits of tourism in alpine grazing commons. *Am. J. Agric. Econ.* **2011**, *93*, 809–824, doi:10.1093/ajae/aaq174.
- [23] Cepeda, G.; Vera, D. Dynamic capabilities and operational capabilities: A knowledge management perspective. *J. Bus. Res.* **2007**, *60*, 426–437, doi:10.1016/j.jbusres.2007.01.013.
- [24] Martelo, S.; Barroso, C.; Cepeda, G. The use of organizational capabilities to increase customer value. *J. Bus. Res.* **2013**, *66*, 2042–2050, doi:10.1016/j.jbusres.2013.02.030.
- [25] Salunke, S.; Weerawardena, J.; McColl-Kennedy, J.R. Competing through service innovation: The role of bricolage and entrepreneurship in project-oriented firms. *J. Bus. Res.* **2013**, *66*, 1085–1097, doi:10.1016/j.jbusres.2012.03.005.
- [26] Charters, S.; Ali-Knight, J. Who is the wine tourist? *Tour. Manag.* **2002**, *23*, 311–319, doi:10.1016/S0261-5177(01)00079-6.
- [27] Getz, D.; Brown, G. Critical success factors for wine tourism regions: A demand analysis. *Tour. Manag.* **2006**, *27*, 146–158, doi:10.1016/j.tourman.2004.08.002.
- [28] Sousa, B. A theoretical contribution from the perspective of innovation process in wine tourism contexts. *Mark. Tour. Rev.* **2020**, *4*, 1–18, doi:10.29149/mtr.v4i2.4744.
- [29] Booz; Hamilton, A. & *New products management for the 1980s*; Booz, Allen & Hamilton: McLean (VA), 1980; ISBN 978-1-349-24260-3.
- [30] Ottenbacher, M.; Harrington, R.J. The culinary innovation process. *J. Culin. Sci. Technol.* **2008**, *5*, 9–35, doi:10.1300/J385v05n04_02.
- [31] Hjalager, A.M. A review of innovation research in tourism. *Tour. Manag.* **2010**, *31*, 1–12, doi:10.1016/j.tourman.2009.08.012.
- [32] Gómez, M.; Pratt, M.A.; Molina, A. Wine tourism research: a systematic review of 20 vintages from 1995 to 2014. *Curr. Issues Tour.* **2019**, *22*, 2211–2249, doi:10.1080/13683500.2018.1441267.
- [33] Quintal, V.A.; Thomas, B.; Phau, I.; Soldat, Z. Segmenting Hedonic Wine Tourists Using Push-Pull Winescape Attributes. *Australas. Mark. J.* **2021**, 183933492199947, doi:10.1177/1839334921999478.
- [34] Cho, M.; Bonn, M.A.; Brymer, R.A. A Constraint-Based Approach to Wine Tourism Market Segmentation. *J. Hosp. Tour. Res.* **2017**, *41*, 415–444, doi:10.1177/1096348014538049.
- [35] Alebaki, M.; Iakovidou, O. Market segmentation in wine tourism: a comparison of approaches. *Tourismos* **2011**, *6*, 123–140.

- [36] Molina, A.; Gómez, M.; González-Díaz, B.; Esteban, Á. Market segmentation in wine tourism: strategies for wineries and destinations in Spain. *J. Wine Res.* **2015**, *26*, 192–224, doi:10.1080/09571264.2015.1051218.
- [37] Festa, G.; Shams, S.M.R.; Metallo, G.; Cuomo, M.T. Opportunities and challenges in the contribution of wine routes to wine tourism in Italy – A stakeholders' perspective of development. *Tour. Manag. Perspect.* **2020**, *33*, doi:10.1016/j.tmp.2019.100585.
- [38] Galati, A.; Tinervia, S.; Crescimanno, M.; Spezia, F. Changes in the international wine market competitiveness. *Int. J. Glob. Small Bus.* **2017**, *9*, 277–293, doi:10.1504/ijgsb.2017.089901.
- [39] Galati, A.; Crescimanno, M.; Tinervia, S.; Iliopoulos, C.; Theodorakopoulou, I. Internal resources as tools to increase the global competition: The Italian wine industry case. *Br. Food J.* **2017**, *119*, 2406–2420, doi:10.1108/BFJ-02-2017-0092.
- [40] Giacomarra, M.; Shams, S.M.R.; Crescimanno, M.; Sakka, G.; Gregori, G.L.; Galati, A. Internal vs. external R&D teams: Evidences from the Italian wine industry. *J. Bus. Res.* **2021**, *128*, 752–761, doi:10.1016/J.JBUSRES.2019.05.029.
- [41] Ellis, A.; Park, E.; Kim, S.; Yeoman, I. What is food tourism? *Tour. Manag.* **2018**, *68*, 250–263.
- [42] Lavandoski, J.; Pinto, P.; Silva, J.A.; Vargas-Sánchez, A. Causes and effects of wine tourism development in wineries: The perspective of institutional theory. *Int. J. Wine Bus. Res.* **2016**, *28*, 266–284, doi:10.1108/IJWBR-08-2015-0032.
- [43] Vo Thanh, T.; Kirova, V. Wine tourism experience: A netnography study. *J. Bus. Res.* **2018**, *83*, 30–37, doi:10.1016/J.JBUSRES.2017.10.008.
- [44] Frost, W.; Frost, J.; Strickland, P.; Smith Maguire, J. Seeking a competitive advantage in wine tourism: Heritage and storytelling at the cellar-door. *Int. J. Hosp. Manag.* **2020**, *87*, doi:10.1016/j.ijhm.2020.102460.
- [45] Peters, G.L. *American winescapes: The cultural landscapes of America's wine country*; Westview: Boulder CO, 2018; ISBN 9780429970887.
- [46] Bruwer, J.; Gross, M.J. A multilayered macro approach to conceptualizing the winescape construct for wine tourism. *Tour. Anal.* **2017**, *22*, 497–509, doi:10.3727/108354217X15023805452059.
- [47] Guedes, A.; Rebelo, J. Winescape's Aesthetic Impact on Lodging Room Prices: A Spatial Analysis of the Douro Region. *Tour. Plan. Dev.* **2020**, *17*, 187–206, doi:10.1080/21568316.2019.1597761.
- [48] Sottini, V.A.; Barbierato, E.; Bernetti, I.; Capecci, I.; Fabbrizzi, S.; Menghini, S. Winescape perception and big data analysis: An assessment through social media photographs in the Chianti Classico region. *Wine Econ. Policy* **2019**, *8*, 127–140, doi:10.1016/j.wep.2019.07.001.
- [49] Thomas, B.; Quintal, V.A.; Phau, I. Wine Tourist Engagement With the Winescape: Scale Development and Validation. *J. Hosp. Tour. Res.* **2018**, *42*, 793–828, doi:10.1177/1096348016640583.
- [50] Bruwer, J.; Prayag, G.; Disegna, M. Why wine tourists visit cellar doors: Segmenting motivation and destination image. *Int. J. Tour. Res.* **2018**, *20*, 355–366, doi:10.1002/jtr.2187.
- [51] Priilaid, D.; Ballantyne, R.; Packer, J. A “blue ocean” strategy for developing visitor wine experiences: Unlocking value in the Cape region tourism market. *J. Hosp. Tour. Manag.* **2020**, *43*, 91–99, doi:10.1016/j.jhtm.2020.01.009.
- [52] Gatti, S.; Maroni, F. A profile of wine tourists in some Italian region vineyards: an application of the multiple correspondence analysis. *Vineyard Data Quantif. Soc. Colloq.* **2004**.
- [53] Boncinelli, F.; Contini, C.; Gerini, F.; Romano, C.; Scozzafava, G.; Casini, L. The Role of Context Definition in Choice Experiments: a Methodological Proposal Based on Customized Scenarios. *Wine Econ. Policy* **2020**, *9*, 49–62, doi:10.36253/web-7978.
- [54] Hayes, P. Creating Opportunity from Crisis, Progress from Research: Redefining the Wine Sector. *Wine Econ. Policy* **2020**, *9*, 3–4, doi:10.36253/web-8333.
- [55] Tafel, M.C.; Szolnoki, G. Relevance and challenges of wine tourism in Germany: a winery operators' perspective. *Int. J. Wine Bus. Res.* **2021**, *33*, 60–79, doi:10.1108/IJWBR-11-2019-0059.
- [56] Galloway, G.; Mitchell, R.; Getz, D.; Crouch, G.; Ong, B. Sensation seeking and the prediction of attitudes and behaviours of wine tourists. *Tour. Manag.* **2008**, *29*, 950–966, doi:10.1016/j.tourman.2007.11.006.
- [57] Marzo-Navarro, M.; Pedraja-Iglesias, M. Critical factors of wine tourism: Incentives and barriers from the potential tourist's perspective. *Int. J. Contemp. Hosp. Manag.* **2012**, *24*, 312–334, doi:10.1108/09596111211206196.
- [58] Pizam, A.; Ellis, T. Customer satisfaction and its measurement in hospitality enterprises. *Int. J. Contemp. Hosp. Manag.* **1999**, *11*, 326–339, doi:10.1108/09596119910293231.
- [59] Seddighi, H.R.; Nutall, M.W.; Theocharous, A.L. Does cultural background of tourists influence the destination choice? an empirical study with special reference to political instability. *Tour. Manag.* **2001**,

- 22, 181–191, doi:10.1016/S0261-5177(00)00046-7.
- [60] Finn, A.; Louviere, J.J. Determining the Appropriate Response to Evidence of Public Concern: The Case of Food Safety. *J. Public Policy Mark.* **1992**, *11*, 12–25, doi:10.1177/074391569201100202.
- [61] ChoiceMetrics *Ngene 1.2 user manual and reference guide: The cutting edge in experimental design*; 2018;
- [62] Rose, J.M.; Bliemer, M. *Constructing Efficient Choice Experiments*; 2005;
- [63] McFadden, D. The measurement of urban travel demand. *J. Public Econ.* **1974**, *3*, 303–328, doi:10.1016/0047-2727(74)90003-6.
- [64] Flynn, T.N.; Marley, A.A. Best-worst scaling: theory and methods. In *Handbook of choice modelling*; Hess, S., Daly, A., Eds.; Edward Elgar Publishing, 2014; pp. 179–199.
- [65] Train, K.E. *Discrete Choice Methods with Simulation*; Cambridge University Press: Cambridge (UK), 2001; Vol. 9780521766; ISBN 9780521766555.
- [66] Lusk, J.L.; Briggeman, B.C. Food values. *Am. J. Agric. Econ.* **2009**, *91*, 184–196, doi:10.1111/j.1467-8276.2008.01175.x.
- [67] Masiero, L.; Qiu, R.T.R.; Zoltan, J. Long-Haul Tourist Preferences for Stopover Destination Visits. *J. Travel Res.* **2020**, *59*, 811–827, doi:10.1177/0047287519867143.
- [68] Asero, V.; Patti, S. Wine tourism experience and consumer behavior: The case of Sicily. *Tour. Anal.* **2011**, *16*, 431–442.
- [69] Kim, A.K.; Del Chiappa, G.; Napolitano, E. Understanding the Wine Tourist Markets' Motivations, Travel Constraints and Perceptions of Destination Attributes: A Case Study of Winery Visitors in Sardinia, Italy. *Wine Tour. Destin. Manag. Mark.* **2019**, *9*–27, doi:10.1007/978-3-030-00437-8_2.
- [70] Duarte Alonso, A.; Kok, S.K. Identifying key wine product and wine tourism attributes in an ultra-peripheral wine region: implications for wine consumers and wine tourism. *Tour. Recreat. Res.* **2020**, *0*, 1–16, doi:10.1080/02508281.2020.1746999.
- [71] Back, R.M.; Bufquin, D.; Park, J.Y. Why do They Come Back? The Effects of Winery Tourists' Motivations and Satisfaction on the Number of Visits and Revisit Intentions. *Int. J. Hosp. Tour. Adm.* **2021**, *22*, 1–25, doi:10.1080/15256480.2018.1511499.
- [72] Thomas, B.; Quintal, V.A.; Phau, I. Wine Tourist Engagement With the Winescape: Scale Development and Validation. *J. Hosp. Tour. Res.* **2018**, *42*, 793–828, doi:10.1177/1096348016640583.
- [73] Bruwer, J.; Lesschaeve, I. Wine Tourists' Destination Region Brand Image Perception and Antecedents: Conceptualization of a Winescape Framework. *J. Travel Tour. Mark.* **2012**, *29*, 611–628, doi:10.1080/10548408.2012.719819.

STATISTICAL ANNEX

Table A1. Estimation results. Multinomial Logit models.

Name		Variable description	MNL1			MNL2		
Par	Var		Estimates	t-test	p-val	Estimates	t-test	p-val
α_{ASC1}	ASC1	Alternative 1 specific constant	-0.282	-16.8	0	-0.61	-20.76	0
α_{ASC2}	ASC2	Alternative 2 specific constant	-0.541	-30.38	0	-0.859	-32.41	0
α_{ASC3}	ASC3	Alternative 3 specific constant	-0.454	-25.79	0	-0.629	-28.13	0
λ_W	W	W=1 for worst choices (scale factor)	0	-	-	-0.625	-17.61	0
β_{D1}	D1	To be able to taste the wines produced at wineries	1.9	33.99	0	2.44	32.32	0
β_{D2}	D2	Being able to visit wineries	1.99	35.72	0	2.47	33.85	0
β_{D3}	D3	The visiting hour of the wineries are long/extended	1.3	23.14	0	1.68	22.5	0
β_{D4}	D4	Being able to buy the wines produced at the wineries	2	35.39	0	2.53	33.88	0
β_{D5}	D5	Having wine specialists take care of you during visits	1.76	30.46	0	2.3	30.21	0
β_{D6}	D6	The existence of specific gastronomic activities	1.09	19.98	0	1.43	19.28	0
β_{D7}	D7	The existence of a varied gastronomic offer	0.887	16.35	0	1.25	16.65	0
β_{D8}	D8	The possibility of eating at the wineries	0.656	12.06	0	0.938	12.64	0
β_{D9}	D9	The existence of organised trips (lodging, visit, tasting, etc.)	0.872	16.3	0	1.12	15.46	0
β_{D10}	D10	The existence of specific lodging	0.532	9.77	0	0.729	9.53	0
β_{D11}	D11	The existence of sports activities in the area	-0.954	-16.47	0	-1.64	-15.46	0
β_{D12}	D12	The appeal of the natural environment in the area	1.56	28.17	0	2.02	27.31	0
β_{D13}	D13	The existence of organised wine tourism trips	0.736	13.62	0	1.02	13.49	0
β_{D14}	D14	The area to be visited is famous for its wines	0.941	18.23	0	1.2	17.06	0
β_{D15}	D15	The fame of the wine in the region	0.889	16.17	0	1.21	16.07	0
β_{D16}	D16	The existence of well-defined wine routes in the region	0.774	14.56	0	0.974	13.25	0
β_{D17}	D17	The climate of the area	1.11	20.97	0	1.36	19.62	0
β_{D18}	D18	The existence of specific gastronomic activities	1.15	21.11	0	1.4	19.25	0
β_{D19}	D19	The existence of a varied gastronomic offer	1.14	20.93	0	1.38	19	0
β_{D20}	D20	The possibility of participating in cultural tourism in the area	0.919	17.37	0	1.18	15.99	0
β_{D21}	D21	The existence of stores/open-air markets for agricultural products from the area	1.2	21.59	0	1.53	20.56	0
β_{D22}	D22	The existence of stores/open-air markets for artisan products from the area	0.961	17.57	0	1.32	18.15	0
β_{D23}	D23	The possibility of taking wine tasting courses	0.549	10.08	0	0.912	11.76	0
β_{D24}	D24	Being able to increase my knowledge of wine	1.05	19.21	0	1.45	19.24	0
β_{D25}	D25	The possibility of participating in wine production activities	1.17	21.15	0	1.54	20.63	0
β_{D26}	D26	Meeting the winery owners	0.874	16.17	0	1.28	16.89	0
β_{D27}	D27	The existence of activities for children	0.0634	1.17	0.24	0.0938	1.17	0.24
β_{D28}	D28	The existence of wine museums or exhibitions	0.403	7.39	0	0.615	8.08	0
$I^*(0)$			-39057.763			-39057.763		
$I^*(\beta)$			-35356.212			-35182.887		
ρ^2			0.095			0.099		
Adj. ρ^2			0.094			0.098		
Num. Obs.			31436			31436		

Table A2. Estimation results. Random parameter Mixed Logit model.

Parameter name	Variable name	Variable description	RPL1				
			Estimate	t-test	p-val	Confidence Interval	
						Low	Up
Fixed parameters							
α_{ASC1}	ASC1	Alternative 1 specific constant	0.2682	10.84	0.00	0.22	0.32
α_{ASC2}	ASC2	Alternative 2 specific constant	-0.1536	-5.82	0.00	-0.21	-0.10
α_{ASC3}	ASC3	Alternative 3 specific constant	-0.2546	-9.57	0.00	-0.31	-0.20
β_{D1}	D1	To be able to taste the wines produced at wineries	2.8895	34.97	0.00	2.73	3.05
β_{D3}	D3	The visiting hour of the wineries are long/extended	1.8950	24.50	0.00	1.74	2.05
β_{D6}	D6	The existence of specific gastronomic activities	1.6941	23.58	0.00	1.55	1.83
β_{D7}	D7	The existence of a varied gastronomic offer	1.3537	19.47	0.00	1.22	1.49
β_{D8}	D8	The possibility of eating at the wineries	0.9324	13.40	0.00	0.80	1.07
β_{D9}	D9	The existence of organised trips (lodging, visit, tasting, etc.)	1.1706	16.78	0.00	1.03	1.31
β_{D10}	D10	The existence of specific lodging	0.8166	12.03	0.00	0.68	0.95
β_{D11}	D11	The existence of sports activities in the area	-0.9244	-13.18	0.00	-1.06	-0.79
β_{D13}	D13	The existence of organised wine tourism trips	0.9655	14.13	0.00	0.83	1.10
β_{D14}	D14	The area to be visited is famous for its wines	1.0334	15.13	0.00	0.90	1.17
β_{D15}	D15	The fame of the wine in the region	1.2778	17.68	0.00	1.14	1.42
β_{D16}	D16	The existence of well-defined wine routes in the region	1.1350	16.57	0.00	1.00	1.27
β_{D18}	D18	The existence of specific gastronomic activities	1.4453	20.15	0.00	1.30	1.59
β_{D19}	D19	The existence of a varied gastronomic offer	1.4935	20.91	0.00	1.35	1.63
β_{D20}	D20	The possibility of participating in cultural tourism in the area	1.3054	19.04	0.00	1.17	1.44
β_{D21}	D21	The existence of stores/open-air markets for agricultural products from the area	1.4061	18.57	0.00	1.26	1.55
β_{D23}	D23	The possibility of taking wine tasting courses	0.9129	13.25	0.00	0.78	1.05
β_{D24}	D24	Being able to increase my knowledge of wine	1.5851	22.00	0.00	1.44	1.73
β_{D25}	D25	The possibility of participating in wine production activities	1.5594	21.53	0.00	1.42	1.70
β_{D26}	D26	Meeting the winery owners	1.2105	17.05	0.00	1.07	1.35
β_{D27}	D27	The existence of activities for children	0.1024	1.52	0.13	-0.03	0.23
β_{D28}	D28	The existence of wine museums or exhibitions	0.6111	8.79	0.00	0.47	0.75
Random parameters (estimated mean)							
μ_{D2}	D2	Being able to visit wineries	4.1943	11.12	0.00	3.45	4.93
μ_{D4}	D4	Being able to buy the wines produced at the wineries	4.1684	16.04	0.00	3.66	4.68
μ_{D5}	D5	Having wine specialists take care of you during visits	3.6615	9.95	0.00	2.94	4.38
μ_{D12}	D12	The appeal of the natural environment in the area	3.1261	14.37	0.00	2.70	3.55
μ_{D17}	D17	The climate of the area	2.3399	5.08	0.00	1.44	3.24
μ_{D22}	D22	The existence of stores/open-air markets for artisan products from the area	2.3287	6.42	0.00	1.62	3.04
Random parameters (estimated standard deviation)							
σ_{D2}	D2	Being able to visit wineries	2.5911	15.04	0.00	2.25	2.93
σ_{D4}	D4	Being able to buy the wines produced at the wineries	2.1704	17.58	0.00	1.93	2.41
σ_{D5}	D5	Having wine specialists take care of you during visits	1.9262	14.56	0.00	1.67	2.19
σ_{D12}	D12	The appeal of the natural environment in the area	2.0137	15.50	0.00	1.76	2.27
σ_{D17}	D17	The climate of the area	1.7108	15.40	0.00	1.49	1.93
σ_{D22}	D22	The existence of stores/open-air markets for artisan products from the area	1.4104	14.22	0.00	1.22	1.60

Parameter name	Variable name	Variable description	RPL1					
			Estimate	t-test	p-val	Confidence Interval		
						Low	Up	
Systematic heterogeneity in mean								
μ_{D2^*V2}	D2*V2	Being able to visit wineries * The possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia	-0.2892	-3.56	0.00	-0.45	-0.13	
μ_{D2^*V4}	D2*V4	Being able to visit wineries * Gender	1.0052	4.08	0.00	0.52	1.49	
μ_{D2^*V5}	D2*V5	Being able to visit wineries * Age	-0.2183	-2.88	0.00	-0.37	-0.07	
μ_{D4^*V2}	D4*V2	Being able to buy the wines produced at the wineries * The possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia	-0.3137	-3.55	0.00	-0.49	-0.14	
μ_{D4^*V8}	D4*V8	Being able to buy the wines produced at the wineries * Place of residency	0.4779	1.81	0.07	-0.04	1.00	
μ_{D5^*V2}	D5*V2	Having wine specialists take care of you during visits * The possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia	-0.2129	-2.38	0.02	-0.39	-0.04	
μ_{D5^*V7}	D5*V7	Having wine specialists take care of you during visits * Length of stay	-0.1167	-1.08	0.28	-0.33	0.10	
μ_{D5^*V8}	D5*V8	Having wine specialists take care of you during visits * Place of residency	-0.7163	-2.53	0.01	-1.27	-0.16	
μ_{D12^*V2}	D12*V2	The appeal of the natural environment in the area * The possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia	-0.2664	-3.83	0.00	-0.40	-0.13	
μ_{D17^*V1}	D17*V1	The climate of the area * I am interested in wine and in the activities related to it	-0.4665	-3.98	0.00	-0.70	-0.24	
μ_{D17^*V2}	D17*V2	The climate of the area * The possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia	0.3473	3.98	0.00	0.18	0.52	
μ_{D17^*V3}	D17*V3	The climate of the area * I frequently read magazines that are specialized in wines	-0.2006	-2.03	0.04	-0.39	-0.01	
μ_{D17^*V4}	D17*V4	The climate of the area * Gender	0.7373	3.38	0.00	0.31	1.16	
μ_{D17^*V5}	D17*V5	The climate of the area * Age	0.1619	2.46	0.01	0.03	0.29	
μ_{D22^*V1}	D22*V1	The existence of stores/open-air markets for artisan products from the area * I am interested in wine and in the activities related to it	-0.2050	-2.47	0.01	-0.37	-0.04	
μ_{D22^*V2}	D22*V2	The existence of stores/open-air markets for artisan products from the area * The possibility to visit wineries and to experience activities related to wine were sufficient elements for taking a trip to Sardinia	0.1494	2.23	0.03	0.02	0.28	
μ_{D22^*V4}	D22*V4	The existence of stores/open-air markets for artisan products from the area * Gender	-0.5425	-2.94	0.00	-0.90	-0.18	
μ_{D22^*V7}	D22*V7	The existence of stores/open-air markets for artisan products from the area * Length of stay	-0.1490	-2.03	0.04	-0.29	-0.01	
$I^*(0)$					-39057.763			
$I^*(\beta)$					-32295.715			
ρ^2					0.173			
Adj. ρ^2					0.172			
Num.								
Obs.					31436			



Citation: Luis Felipe García-Rodea, Humberto Thomé-Ortiz, Angélica Espinoza-Ortega, Pedro de Alcântara Bittencourt-César (2022) Viniculture and Tourism in the New World of Wine: a literature review from the American continent. *Wine Economics and Policy* 11(1): 127-140. doi:10.36253/wep-10897

Copyright: © 2022 Luis Felipe García-Rodea, Humberto Thomé-Ortiz, Angélica Espinoza-Ortega, Pedro de Alcântara Bittencourt-César. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/wep>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Viniculture and Tourism in the New World of Wine: a literature review from the American continent

LUIS FELIPE GARCÍA-RODEA¹, HUMBERTO THOMÉ-ORTIZ^{1,*}, ANGÉLICA ESPINOZA-ORTEGA¹, PEDRO DE ALCÂNTARA BITTENCOURT-CÉSAR²

¹ *Universidad Autónoma del Estado de México, Toluca, Mexico. E-mail:* felipe_grodea@hotmail.com; humbertothome@hotmail.com; angelica.cihuatl@gmail.com

² *Universidade de Caxias do Sul: Caxias do Sul, RIO Grande do Sul, Brasil. E-mail:* pabcesar@ucs.br

*Corresponding author.

Abstract. In the so-called New World of Wine, the wine industry, particularly in the American continent, has increased its presence in various socioeconomic areas through strategies adapted to market conditions. This literature review aims to identify research on viticulture and wine tourism in the New World of Wine and categorize them to indicate new lines of research and knowledge gaps. Given that the consumption and production of wine in the American continent were generated in European migrations and through the cultural mobility of food consumer goods, wine production systems have been consolidated in some emerging territories. However, the scientific production in this regard shows essential areas of opportunity.

Keywords: emerging territories, food and wine tourism, vitiviniculture.

1. INTRODUCTION

Wine production areas have opted for tourist activity to increase their development opportunities so that wine and gastronomy have played an essential role since the late 1980s [1,2]. This aspect is an opportunity for job creation, income generation in rural areas, as an engine for tourism development in inland destinations and promoting domestic wine consumption [3,4], coupled with the preservation of the territory's agri-food heritage [5] and the consolidation of networks for collective action [6].

Wine tourism is defined as the use of wineries as tourist attractions focused on wine [7], integrating tourism products, services, and events [8], and associated with a territory through its identity elements and know-how [9]. Its importance reflects a complex relationship between wineries, wine-growing regions, and consumers [10,11] to experience local culture [12].

Due to the increase in wine tourists [13], they strive to have competitive advantages against different market niches, creating brand loyalty and

improving consumer awareness. Numerous wineries depend on visitors [14], and this synergy can generate positive impacts throughout the region [15], promoting visits to museums and wineries, as well as tastings [16].

Wine production is frequently associated with the “Old World of Wine,” referring to European regions, mainly France, Italy, Spain, Portugal, and Germany. These countries have a historical depth in wine production [17,18,19], integrating for centuries territorial methods and resources for the improvement of viticulture, distinguishing itself by its commercial protectionism and conservatism [20].

Given the socioeconomic mobility towards the American continent, from the 16th century on, the so-called “New World of Wine” was emerging, which includes countries that were initially European colonies [21], particularly in Latin America, Australia, South Africa, New Zealand and the United States [18,22,23].

The wine producers of the New World of Wine are expanding towards the consolidated markets of wine consumption, through comparative advantages based on experimentation, development, and innovation, with a significant increase in the cultivation areas and the number of wineries [20].

Likewise, a frank development of the scientific literature on viticulture and wine tourism can be observed. However, it is scattered and does not provide a comprehensive analysis of tourism production and consumption of wine in emerging territories, which is why the development of this literature review is considered necessary.

2. METHODOLOGICAL APPROACH

This literature review was exploratory, focused on the American continent’s New World of Wine countries: Argentina, Brazil, Chile, the United States, and Mexico (Figure 1). The purpose was to identify the research areas that wine studies have focused on; the process included searching and analyzing scientific articles published from 2010 to 2020 in the chosen countries.

A systematic analysis was done on the Google Scholar, Scielo, Web of Science, and Scopus databases. The search was guided by the keywords: wine tourism, New World of Wine, wine and tourism, viticulture, viniculture. Considering that the American countries have an essential linguistic variation, studies in English, Spanish and Portuguese were considered. Two eligibility criteria were applied to identify the articles with the highest scientific quality (Figure 2). The first criterion excluded gray literature (thesis, conference presentations, conference communications, and research notes). The sec-

ond criterion excluded those publications whose results were limited in terms of constituting merely descriptive papers. It was intended that all the selected references allow us to discuss the scientific advance on the New World of Wine from a global perspective.

Based on selecting titles, abstracts, and keywords, 72 scientific documents were reviewed, including documents written in English, Spanish and Portuguese, scientifically recognized internationally. From the selected corpus of literature, a content analysis was carried out through the definition of thematic axes. Following the above, they were classified under the following categories: i) Public policies; ii) Wine tourism; iii) Marketing; iv) Heritage and culture; v) Sustainability and; vi) Consumption and consumers. A subsequent analysis was made in the five countries with oenological activities based on the categories mentioned above.

3. RESULTS AND DISCUSSIONS

The development of viticulture in emerging territories has led to greater integration of supply and demand in the consolidation of the enogastronomic experience [16,24,5]. The historical depth of the wine-growing countries of the New World of Wine is a fundamental aspect of territorial anchoring and construction of cultural identity. This aspect has played an essential role in consolidating the supply and demand of wines from emerging regions on national and international scales. From this, it is relevant to identify the evolution of the wine industries in each chosen country.

3.1 *The emergence of viticulture in the American continent*

The evolution in the historical and productive trajectories in emerging wine-producing countries has been crucial in developing an offer throughout the wine production chain. This fact has been framed in each chosen country based on the socioeconomic transformations over time, evidencing a consolidation in the wine industry.

3.1.1 Mexico

Mexican viticulture has its origins in colonial times, in the New Hispanic communities, when religious orders introduced and planted various varieties of vines in the country [25,26], positioning itself as the oldest producing country in America, whose cultivation dates back to 1528 [27]. Viticulture in Mexico had repercussions due to the prohibition of wine production in the

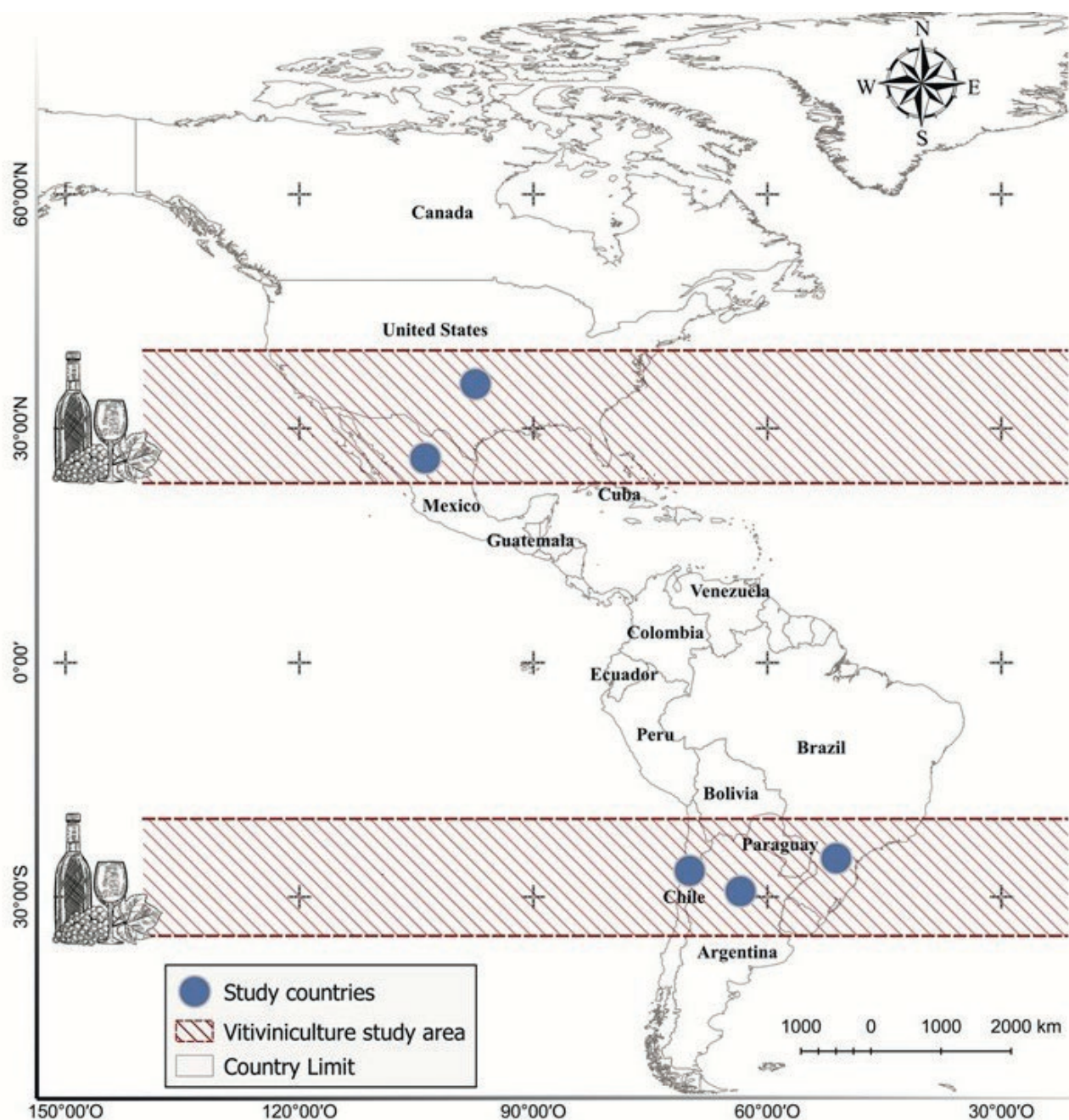


Figure 1. Geographical band of wine and countries of the New World of Wine in the American Continent. Source: Prepared by the authors.

Colony Era [26], which influenced the late development of the industry. By the 1980s, Mexico moved towards a neoliberal economic model that opened imports [26]. As an alternative for diversifying income, wine regions began to explore the possibility of incorporating wine tourism as of the 1990s, according to Novo et al. [28].

The wine-producing states and promoters of wine tourism in the country are Sonora, Zacatecas, and

Aguascalientes. However, there are three that generate the highest production in the country: Baja California (Valle de Guadalupe, Valle Ojos Negros, Valle Santo Tomás and Valle San Vicente), Coahuila (Valle de Parras), and Querétaro (Tequisquiapan, Bernal, and Cadereyta), which already they have established tourist routes with a social and economic value at the national level [29,30,31].

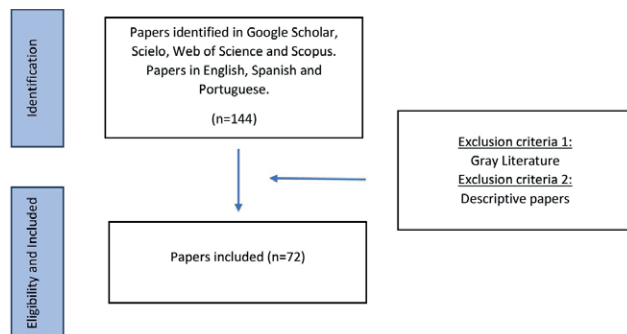


Figure 2: Research process and exclusion criteria. Source: Prepared by the authors.

3.1.2 United States

There are indications of the production of native grapes, such as Isabella (a hybrid of *Vitis labrusca* and *Vitis vinifera*), that were not initially used in the production of wines [32]. Formally, the production of wine in the United States is associated with the processes of Catholic evangelization by the Franciscan friar García de Zúñiga who began to prepare sacramental wines [33]. The first wine reported in the country dates from 1769 [34]. New York was the first wine-producing state, starting this industry in 1677, later California in 1960, followed by Oregon and Washington in 1970 [35].

Wine production in this country is distributed in 50 states [36,37]. The most iconic regions are the Napa Valley and Sonoma, in California [38] due to the production of quality wines and being one of the central wine-producing regions in the world [34]. California has established itself as the second most attractive destination for food and wine in the United States [39]. This wine-growing region has a leading role in the market, depending on the number of wineries and wine production [36].

3.1.3 Argentina

Viticulture began in the 16th century with the arrival of the first grapes from Spain and the Jesuits who produced wine for religious purposes, finding the Andes region ideal [40] late 19th and early 20th centuries. Argentine viticulture developed in a limited number of large estates, whose owners controlled the production and sale of wine, selling almost everything to regional and national markets [41,42]. In the 1990s, the impact of globalization on the Argentine wine industry began with reforms that transformed the production system to supply the national and international market [43,44].

3.1.4 Chile

The history of the origin of wine in Chile dates back to the 16th century [45]. Furthermore, it has undergone significant technological transformations since the 1980s, with a strengthening of exports in 1990, since it was only exported 7% of production [46,47]. This aspect benefited the wine market since the country had experienced a drop in domestic consumption due to economic and social situations [45].

It is currently one of the largest wine producers in Latin America [48] with 13 wine regions, the most characteristic being Colchagua, Casablanca, and Maule [49]; the last two with production mainly of Chilean Premium wines [47]. The wine tourism activity has been promoted since 1996 as an economical alternative, positioning it as the eighth wine-producing country in the world and the first among the countries of the New World of Wine [50].

3.1.5 Brazil

Wine production in Brazil is linked to European immigration [51], mainly from Italians who arrived in 1875 and established vineyards to produce table wine [52]. This situation makes wine a substantial social burden and culturally linked to history; therefore, Brazil is currently occupying the sixth position among the New World of Wine [53].

There are regions certified in wine production, such as: Pinto Bandeira, Monte Belo do Sul, Flores da Cunha, Urussanga and Vale dos Vinhedos (Serra Gaúcha) [54,55,56], the latter standing out for having 80% of the national wine production [57,58,59].

The Brazilian wine industry has a competitive advantage because many of its products have Geographical Indication (GI) [54]. Although Monticelli et al. [60] mention that it is an emerging country in the initial internationalization phase, the wine production is exported to Chile, Argentina, Portugal, and Italy [55].

3.2 Scientific production of wine in the American continent

Parallel to its historical evolution, the New World of Wine has gained scientific publications [61]. In this regard, Gómez et al. [23] indicate that the number of articles on these topics has increased since the mid-1990s in areas such as agriculture, geography, economics, and sociology. According to Bonn et al. [62], the global growth of wine production and consumption has consequences. Even though publications on wine are

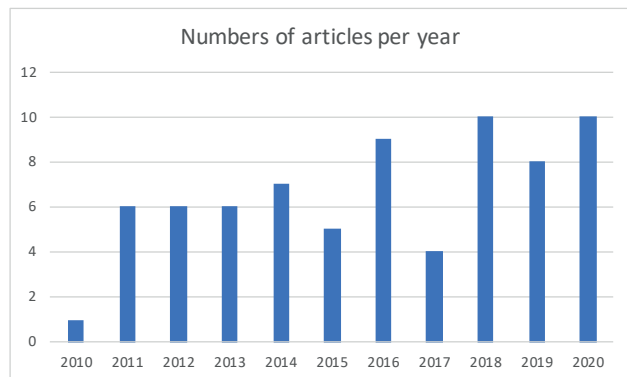


Figure 3. Numbers of articles per year (2010-2020). Source: Prepared by authors.

incipient in some emerging countries [28], scientific production has been consolidated in international indexed journals in recent years (Figure 3).

The scientific production analyzed (2010 to 2020) shows great differences concerning the generation of knowledge about wine among the American countries of the New World of Wine. The United States stands out ($n = 26$), followed by Brazil ($n = 16$); later Mexico ($n = 13$); Chile ($n = 11$) and finally Argentina ($n = 6$). These data are displayed because most of the publications from Latin American countries are in Spanish and Portuguese. Another fact that affects these figures is that monographic and descriptive works were not considered in countries with low scientific productivity, which lacked a strong analytical component and scientific rigor.

From this analysis, it is evident that the New World of Wine represents, at a global level, a *sui generis* object of study, which occupies a specific place within viticulture research. Therefore, the systematic analysis of the information allowed us to identify the diversity of topics in the emerging viticulture processes and their theoretical approaches (Table 1).

The above summary of publications shows that wine-producing countries have adapted to the supply and demand of the environment, whether national or international. They have developed dynamics of appropriation of the territory from alternative forms of production and marketing of wine. In this sense, it is observed that the wine-growing regions have opted for the consolidation of new markets. This situation results in the appropriation of viticulture in these territories that cause a socioeconomic transformation in the global sphere.

In this sense, the New World of Wine has undergone exogenous and endogenous transformations reflected in scientific production. The topics that have had the highest incidence are highlighted (Figure 4).

Of the studies included in the literature review, most are qualitative ($n = 44$), followed by those with a quantitative approach ($n = 23$) and a minority with a mixed analysis ($n = 5$).

Regarding the *heritage and culture* category, the studies are still incipient. European migrations in the American continent marked a reference in wine production and its territorial appropriation, although it has not been addressed in depth. In Chile and Brazil, these investigations have contributed to the knowledge of the wine regions' socioeconomic history and the development of the wine industry [9,87]. In the USA, it is emphasized that cultural service activities are related to wine production and benefit the development of wineries [88]. In an exploratory way, these studies can contribute to the progress of the viticultural regions of the New World of Wine to identify their territorial anchorage and the tradition around wine.

On the other hand, *the sustainability* category provides guidelines for the strengthening of viticulture. This fact is based on considering climate change at a global level [90]. Some authors [36] refer that a differentiation must be generated in the sustainable practices of the wineries. Identifying the adaptability of the viticultural practice from the study of pests, diseases, and stress of the vines [93]. The use of wastewater in grape cultivation has been imperative due to the constant water crisis [92] and the constant changes in land use for crops [42]. These aspects have been considered in Brazil and Chile to focus on sustainable management practices, increase competitiveness, and promote product certifications [89,91]. The increasing environmental degradation worldwide should be a point of analysis in wine production, not compromising natural resources.

Public policies in the New World of Wine should constitute a guiding axis due to the changes generated by globalization. This aspect implies that emerging wine markets strengthen programs in coordination with academic and government institutions under triple helix schemes [35,43]. This relationship between institutions should promote national and international cooperation in emerging countries [60]. To this end, the development of public policies that contribute to technical knowledge and the development of new winemaking practices [52], as well as the increase in wineries [64], should be stimulated. Espejel et al. [63] mention that public policies fail in some emerging countries such as Mexico due to a lack of statutes, ambiguous laws, and a complex relationship between buyers, producers, and the government. With this consideration, viticulture in the American countries would be strengthened, with which and action mechanisms for the consolidation, development, and interna-

Table 1. Summary of wine and tourism studies in the New World of Wine. Source: Prepared by authors.

Topic/Subtopic	Author(s)	Country
i. Public Policies		
Institutional structures	Lara [43]	Argentina
Institutions and wine promotion	Monticelli et al. [60]	Brazil
Development of the wine region	Fachinelli et al. [52]	Brazil
Public policies and viticulture	Espejel et al. [63]	Mexico
Relationship with institutions	Hira and Gabreldar [35]	USA
Wineries expansion policies	Yelvington et al. [64]	USA
ii. Wine tourism		
Wine Routes	Hojman and Hunter-Jones [65]; Schlüter and Norrild [40]; Rainer [44]; Zárate and Barragán [66]; Ramos et al. [67]	Argentina, Brazil, Chile, and Mexico
Wine tourism challenges and opportunities	Figueroa and Rotarou [50]	Chile
Wine tourism adoption	Torres et al. [68]	Chile
Wine tourism analysis	Kunc [69]	Chile
Tourism appropriation mechanisms	De Jesús-Contreras and Thomé-Ortiz [70]	Mexico
Tourism and territorial transformation	De Jesús-Contreras et al. [26]	Mexico
Wine tourism and territory	De Jesús-Contreras et al. [71]	Mexico
Wine tourism potential	Robles and Robles [72]	Mexico
Wine tourism as an emerging activity	Novo et al. [28]	Mexico
Influence of emotions on wine tourism	Pelegrín-Borondo et al. [21]	Mexico
Wine festivals	Hubbard et al. [33]; Sohn and Yuan [73]; Bruwer and Kelley [74]	USA
Wine tourist behavior	Quintal et al. [75]	USA
Wine tourism profile	Garibaldi et al. [39]	USA
Critical factors of wine tourism	Singh and Hsiung [76]	USA
Signposting and wine tourism	Byrd et al. [37]	USA
iii. Marketing		
Wine restructuring due to globalization	Rainer [41]	Argentina
Shared brands	Aparecida et al. [55]; Aparecida and De Moura [54]	Brazil
Wine internationalization	Carneiro et al. [57]; Dalmoro [51]; Felzensztein [47]	Brazil and Chile
Differentiation strategies	Pinto et al. [59]	Brazil
Social capital and competitiveness	Macke et al. [58]; Faccin et al. [77]; Sarturi et al. [78]	Brazil
Circular economy model	Sehnm et al. [56]	Brazil
Market orientation	Rojas-Méndez and Rod [79]	Chile
Differentiated global markets	Overton et al. [46]	Chile
Production of wines for export	Overton and Murray [45]	Chile
Marketing strategies	Duarte [80]; Felzensztein and Deans [49]; Torres and Kunc [48]	USA and Chile
Wine marketing	López and Sotelo [81]	Mexico
The perceived image of a wine destination	Bruwer et al. [82]	USA
The added value of wineries	Duarte [38]	USA
Wine cellars and the hospitality industry	Duarte [83]	USA
Wine business and philanthropy	Gilinsky et al. [84]	USA
Wine strategies and performance	Gilinsky et al. [85]	USA
Protection and hedonism of organic wines	Olsen et al. [86]	USA
Viticultural success factors	Hira and Swarts [34]	USA

Topic/Subtopic	Author(s)	Country
iv. Heritage and culture		
Using traditional methods	Lacoste et al. [87]	Argentina
Cultural identity	Lavandosky et al. [8]	Brazil
Cultural ecosystems	Winkler and Nicholas [88]	USA
v. Sustainability		
Land-use changes	Hafner and Rainer [42]	Argentina
Sustainable management in winemaking	Silva et al. [89]	Brazil
Geoviticultural systems	Bardin-Camparotto et al. [90]	Brazil
Certificates of sustainability of wines	Marola et al. [91]	Chile
Use of wastewater in viticulture	Mendoza-Espinoza et al. [92]	Mexico
Sustainability strategies	Gilinsky et al. [36]	USA
Winemaking practices	Nicholas and Durham [93]	USA
vi. Consumption and consumers		
Consumption motivations	De Oliveira et al. [53]	Brazil
Xenocentrism and consumption	Mueller et al. [94]	Brazil
Consumption preferences	Meraz-Ruiz [95]; Yue and Govindasamy [96]	Mexico and USA
Influence of emotions when buying wine	Meraz-Ruiz et al. [97]	Mexico
Consumption of eco-certified wines	Moscovici et al. [98]	USA
Choice and consumption of wines	Duarte and O'Neill [99]	USA
Consumption and consumers of muscadine grape	Duarte and O'Neill [100]	USA
Generation Z consumers	Thach et al. [101]	USA
Membership in a wine club	Bauman and Taylor [102]	USA

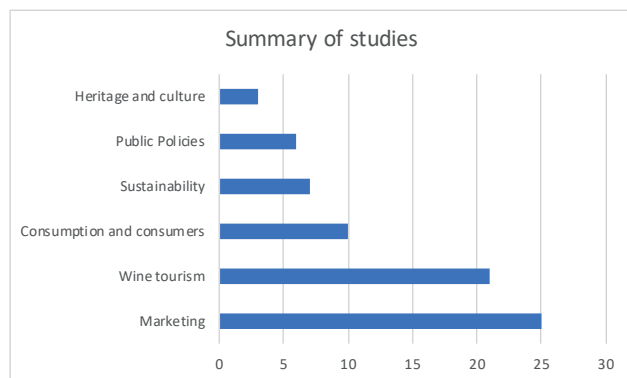


Figure 4. Summary of publications. Source: Prepared by authors.

tionalization of the wine industry of the New World of Wine would be established.

Another opportunity to investigate is *wine tourism* because it is an activity developed as a product diversification strategy. Few studies in countries such as Argentina, Chile, and Brazil in the academic field, although producing regions with routes are identified of wine whose potential for use is high [40,44,65,66,67]. In this sense, Mexico is the country that leads the publications on this subject. Although this may not reflect the countries' actual demand, California (United

States) maintains a leadership role [36]. Incorporating wine tourism into wine-producing regions represents a challenge, although it can contribute to the diversification of the economy [50]. In countries like Chile, support has been provided to establish wine routes [69], although some companies do not have action plans to invest in this initiative [68].

Other studies on wine tourism have been analyzed from the dynamics of territorial appropriation and transformation of the wine regions for their configuration as tourist scenarios [26,70,71,72]. These aspects are related to the emotions of the tourists and the perceived quality in the wineries visit [21,33,74]. Due to the increase of tourist activities in producing regions, studies have examined the enotourist profile and their behavior [39,73,75] and the loyalty towards visits to various wineries [33,76]. The consolidation of wine tourism represents excellent potential for its growth, although, in some wine-growing regions, the connectivity, infrastructure, and signaling are not adequate [28,37].

The synergy created between wine production and tourism has been the key to increasing production benefits [68]. Based on these findings, it is suspected that the producing regions have been able to consolidate a tourism demand by the new market demands, and therefore, it is advisable to strengthen studies on wine tourism in

emerging countries. This aspect represents a development opportunity for the producing regions.

Studies of *wine consumption and consumers* represent an opportunity in countries like the United States, Brazil, and Mexico. Argentina and Chile would have to consider more studies because the consumption scenario is not in sight. These studies are vital due to the need to study consumers to identify their habits and characteristics of the market. The findings in this category focus on establishing a cognitive structure of consumers based on values such as hedonism, stimulation, and care [53]. On the other hand, they focus on analyzing how wine consumers can pursue a social status from acquiring foreign products or brands as a symbol of cosmopolitanism [94]. For this reason, it is essential to strengthening studies on wine consumer profiles [102].

Due to the growing interest in consuming wine in recent decades [53], wine consumption studies have strengthened wineries' offers. Therefore, wine consumption preferences have consolidated the competitive strategies of wineries that have been approached from econometric perspectives and generational groups [95,96,101]. The increase in the direct sale of wine in wineries has established new forms of consumption, which have been approached from an economic perspective, although it is considered that the role of emotions also influences the purchase decision processes, and is an aspect that has not been studied in depth [97]. Another aspect that should be studied is the response to consumer attitudes focused on the consumption of wines with eco-certification [98]. In addition, it is necessary to expand knowledge to provide more information for wine consumption based on vine strains little known to the consumer [100].

As the New World of Wine is an emerging sector in viticulture, it is explained that studies focused on *marketing* are a potential topic for American countries. In the United States, Brazil and Chile, this topic represents the highest percentage of publications. It can be inferred that actions taken by the wine companies have been adapted to the demands of the market. In addition to this, these countries have opted for internationalization in promoting and marketing their products. On the other hand, there is a lack of publications on this item in Argentina and Mexico.

Studies carried out from marketing allow for an in-depth analysis of the influence generated by the wine sector on wine consumers and the strategies implemented towards international competitors [59]. These aspects have been approached from ethnographic methods to identify new market niches in the context of globalization and insertion in new markets [41,46,79]. An effort has also been made to identify the construction process-

es of the sectorial brands from the stakeholders' perspectives [54,55]. Another relevant finding is that the consolidation of wine clusters has made it possible to promote the production of wines from the territory [56,58,77]. Similarly, networks of winemakers have been consolidated to strengthen the internationalization processes of the wine industry [51].

Other studies have focused on understanding the consumer preferences of the new generations (millennials and generation Z) [47]. Based on market studies, it has been possible to adopt various production strategies with low-cost scales, product homogenization, production of products for export, and organic wines [45,86]. As well as marketing strategies based on the recognition of market opportunities [48]. In this regard, Felzenstein and Deans [49] indicate that some companies have already initiated cooperative processes in marketing activities to attract new customers and strengthen marketing aspects [49,85].

The perceived image of wine destinations has become a relevant research area for marketing since it strengthens activities such as wine tourism and wine consumption [82]. Leadership, terroir, entrepreneurial spirit, and how the wine regions' actions are communicated become a competitive advantage [34]. Another relevant finding in some studies [38,80] indicates that demand for products must be satisfied, considering those strains of vines that are not so well known and establishing mechanisms to promote them.

To consolidate the commercialization of wines, it has been proposed to have greater participation in fairs, wine events, and pairings [81] and look for alternatives in hotel companies to publicize new products [83]. In some countries, such as the USA, marketing actions have been focused on strengthening the motivations for visiting wineries based on charitable events and activities [84]. It is essential to consider that there is no government support for these actions in some emerging countries.

In general, the countries that make up the New World of Wine have consolidated their wine offering to compete globally. This fact has set a guideline in establishing quality standards, new territorial appropriations, penetration of new markets, and diversification in the production of vines and wine. In the American context, the theoretical and methodological perspectives around the wine industry have been adapted to the terroir, to the various scales of production (local, national, international), and new market trends.

Based on the literature review, it is realized that both the production of wine, its consumption, and its academic approach have advanced over the years. These

facts show that the importance of wine has been present from ancient civilizations to new generations. Therefore, there are challenges and opportunities in wine studies. Regarding sustainability, action mechanisms must be established to face climatic risks and design production strategies that are not aggressive with the environment.

Public policies will have to consider collaborative participation between various entities to regulate and strengthen the wine industry. On the other hand, heritage and culture studies can set precedents on the development and consolidation of wine regions in the countries of the American continent. This is for the European influence that it has from the processes of colonization and immigration. Regarding wine tourism studies, the challenge is to promote a more informed movement from a sustainable perspective and consider the different tourists who visit wine regions.

Marketing studies have led to better planning of the wine industry and will continue to strengthen due to the constant social changes that lead to perceptions and purchasing influences. Finally, consumers and consumer studies have to be addressed in greater depth since wine intake is increasing, and consumer preferences are dynamic and changing.

The various areas of knowledge selected show a growing interest in the emerging countries of the American continent. This fact is not isolated, since the selected countries are an essential reference in the New World of Wine, due to the growth of the wine industry, the expansion of the wine culture, the diversification of productive and leisure activities, as well as the consolidation of emerging markets with an international scope.

4. CONCLUSION AND IMPLICATIONS

Even though wine production is relatively recent in the American continent countries, compared with the countries of the Old World of Wine, the actions that have been undertaken regarding innovation and organization have generated great competitiveness that has been marginally studied. The countries with the highest scientific production in the Scopus and JCR indices are the United States and Brazil; both focused on wine markets in the American continent. These research areas mark a guideline in the influence of theoretical and empirical study that serves to reference countries such as Mexico, Chile, and Argentina.

In general, the American countries of the New World of Wine are betting on studies of wine markets, wine tourism, and consumption and consumers. This fact indicates that the need for global positioning implies

consolidating work networks that allow a flow of information and products. On the other hand, the strengthening of the wine-growing activity implies a change in the consumption and appropriation of wine production in some traditional societies that do not include it in their tastes and preferences. Studies on wine and wine tourism should, in the future, contemplate economic, commercial, and marketing aspects and strengthen cultural and sustainability aspects in the forms of production.

Based on differences in the countries' publications, it is observed that each country's social, economic, and educational characteristics derive from the publications' productivity. In this way, the main contribution of this review is to delineate future lines of research on wine and wine tourism from a thematic and geographical perspective. However, it is essential to emphasize that the analysis did not consider the economic and political asymmetries that determine the research capacity of the different countries studied.

One limitation in this literature review is that, due to its limited scope and descriptive nature, many of the works published in Spanish and Portuguese were not considered. A good amount of the scientific production of Chile, Mexico, Argentina, and Brazil are case studies with a limited analytical scope. To better understand the production and consumption of wine in emerging countries of the New World of Wine, research must be consolidated and strengthened with the highest standards of quality and scientific rigor.

ACKNOWLEDGMENTS

The authors are indebted for the comments made by the editor and the anonymous reviewers.

A special acknowledgment to the Mexican National Council for Science and Technology (Consejo Nacional de Ciencia y Tecnología).

REFERENCES

- [1] B. Sparks, J. Malady, Emerging wine tourism regions: lessons for development, in: J. Carlsen, S. Charters (Eds.), *Global wine tourism: research, management, and marketing*, CAB International, Oxford, 2006, pp. 67-79.
- [2] C. Hall, G. Prayag, Wine tourism: moving beyond the cellar door?, *International Journal of Wine Business Research*. 29(4) (2017) 338-345. <https://doi.org/10.1108/IJWBR-09-2017-0053>.

- [3] T. López-Guzmán, J. Rodríguez-García, Á. Vieira-Rodríguez, Revisión de la literatura científica sobre enoturismo en España, *Cuadernos de Turismo*. (32) (2013) 171-188.
- [4] B. Ye, H. Qiu, J. Yuan, Intentions to participate in wine tourism in an emerging market: theorization and implications, *Journal of Hospitality and Tourism Research*. 41(8) (2017) 1007-1031. <https://doi.org/10.1177/1096348014525637>.
- [5] M. Tafel, G. Szolnoki, Estimating the economic impact of tourism in German wine regions. *International Journal of Tourism Research*, 22 (2020) 788-799. <https://doi.org/10.1002/jtr.2380>.
- [6] F. Musso, B. Francioni, Agri-food clusters, wine tourism, and foreign markets. The role of local networks for SME's internationalization, *Procedia Economics and Finance*. 27 (2015), 334-343. [https://doi.org/10.1016/s2212-567\(15\)01004-7](https://doi.org/10.1016/s2212-567(15)01004-7).
- [7] D. Getz, G. Brown, Benchmarking wine tourism development: The case of the Okanagan Valley, British Columbia, Canada, *International Journal of Wine Marketing*. 18(2) (2006) 78-97. <https://doi.org/10.1108/09547540610681077>.
- [8] J. Lavandoski, P. Pinto, J. Albino, A. Vargas-Sánchez, Causes and effects of wine tourism development in wineries, *International Journal of Wine Business Research*. 28(3) (2016) 266-284. <https://doi.org/10.1108/IJWBR-08-2015-0032>.
- [9] J. Lavandoski, H. Tonini, M. Barreto, Uva, vino e identidade cultural na Serra Gaúcha (RS, Brasil), *Revista Brasileira de Pesquisa em Turismo*. 6(2) (2012) 216-232.
- [10] J. Bruwer, K. Alant, The hedonic nature of wine tourism consumption: an experiential view, *International Journal of Wine Business Research*. 21(3) (2009) 235-257. <https://doi.org/10.1108/17511060910985962>.
- [11] J. Carlsen, P. Boksberger, Enhancing consumer value in wine tourism, *Journal of Hospitality and Tourism Research*. 39(1) (2015) 132-144. <https://doi.org/10.1177/1096348012471379>.
- [12] M. Crespi-Vallbona, O. Mascarilla-Miró, Wine lovers: their interests in tourist experiences, *International Journal of Culture, Tourism and Hospitality Research*. 14(2) (2020) 239-258. <https://doi.org/10.1108/IJCTHR-05-2019-0095>.
- [13] D. Getz, R. Dowling, J. Carlsen, D. Anderson, Critical success factors for wine tourism, *International Journal of Wine Marketing*. 11(3) (1999) 20-43. <https://doi.org/10.1108/eb008698>.
- [14] E. Byrd, B. Canziani, Y. Hsieh, K. Debbage, S. Sonmez, Wine tourism: motivating visitors through core and supplementary services, *Tourism Management*. 52 (2016) 19-29. <http://doi.org/10.1016/j.tourman.2015.06.009>.
- [15] J. Carlsen, A review of global wine tourism research, *Journal of Wine Research*. 15(1) (2004) 5-13. <https://doi.org/10.1080/0957126042000300281>.
- [16] V. Ribeiro, P. Ramos, N. Almeida, E. Santos-Pavón, Wine and wine tourism experience: a theoretical and conceptual review, *Worldwide Hospitality and Tourism Themes*. 11(6) (2019) 718-730. <https://doi.org/10.1108/WHATT-09-2019-0053>.
- [17] M. Thorpe, The globalisation of the wine industry: new world, old world, and China, *China agricultural economic review*. 1(3) (2009) 301-313. <https://doi.org/10.1108/17561370910958873>.
- [18] H. Wen, J. Tong, S. Yao, The demand chain management for New World Winery: key features of Chinese wine market, *Logistics for Sustained Economic Development*. (2010). [https://doi.org/10.1061/41139\(387\)613](https://doi.org/10.1061/41139(387)613).
- [19] S. Correia, M. Correia, N. Pereira, Wine prestige and experience in enhancing relationship quality and outcomes: wine tourism in the Douro, *International Journal of Wine Business Research*. (2017). <https://doi.org/10.1108/IJWBR-04-2017-0033>.
- [20] G. Banks, J. Overton, Old world, new world, third world? Reconceptualizing the worlds of wine, *Journal of Wine Research*. 21(1) (2010) 57-75. <https://doi.org/10.1080/09571264.2010.495854>.
- [21] J. Pelegrín-Borondo, R. Fernández, L. Meraz-Ruiz, Emotions among winery tourists: new vs. old wine world, *International Journal of Wine Business Research*. 32(2) (2020) 181-201. <https://doi.org/10.1108/IJWBR-01-2018-0005>.
- [22] A. Durán, M. del Río, J. Álvarez, Bibliometric analysis of publications on wine tourism in the databases Scopus and WoS, *European Research on Management and Business Economics*. 23 (2016) 8-15. <https://doi.org/10.1016/j.iedeen.2016.02.001>.
- [23] M. Gómez, M. Pratt, A. Molina, Wine tourism research: a systematic review of vintages from 1995 to 2014, *Current Issues in Tourism*. (2018). <https://doi.org/10.1080/13683500.2018.1441267>.
- [24] L. Vitale, T. López-Guzmán, J. Pérez-Gálvez, E. Di Clemente, (2019). The wine tourist's segmentation: a literature review, *Espacios*. 49(43) (2019) 1-14.
- [25] H. Thomé-Ortiz, D. de Jesús-Contreras, E. de Oliveira-Santos, Aprovechamiento recreativo del patrimonio vitivinícola en el centro de México: Una aproximación sociológica al enoturismo como estrategia de desarrollo territorial, in: J. Picón, D.

- Caravaca, A. Hernández, L. Obando (Eds.), *Experiencias de turismo rural en América Latina y el Caribe*, Universidad Nacional de Costa Rica, Costa Rica, 2019, pp. 223-242.
- [26] D. De Jesús-Contreras, H. Thomé-Ortiz, A. Espinoza-Ortega, I. Vizcarra-Bordi, *Trayectoria territorial enológica de Querétaro, México (1970-2017)*, Cuadernos geográficos de la Universidad de Granada. 58(2) (2019) 240-261. <https://doi.org/10.30827/cuadgeo.v58i2.7358>.
- [27] T. Reyna, Estado actual de la viticultura en Querétaro, *Investigaciones Geográficas*. (17) (1987) 45-63.
- [28] G. Novo, M. Osorio, S. Sotomayor, Wine tourism in Mexico: an initial exploration, *Anatolia*. 30(2) (2019) 246-257. <https://doi.org/10.1080/13032917.2018.1519212>.
- [29] M. Reyes, J. Montiel, O. Valladares, Del dicho al hecho: Análisis de las acciones de política pública que inciden en el turismo enológico en el Valle de Guadalupe, Ensenada, Baja California, in: O. Martínez, T. Cuevas, R. Espinoza (Coords.), *Examen de tendencias del turismo en el umbral del siglo XXI*, Competitive Press, México, 2016, pp. 103-118.
- [30] H. Thomé-Ortiz, Aprovechamiento recreativo de los SIAL: El consumidor implícito del turismo agroalimentario, in: M. Renard (Coord.), *Mercados y desarrollo local sustentable*, Colofón, México, 2016, pp.155-170.
- [31] G. Arévalo, La tura turística enológica en Querétaro y Baja California, México: Un enfoque estratégico, *Revista interamericana de Ambiente y Turismo*. 14(2) (2018) 122-134. <http://dx.doi.org/10.4067/S0718-235X2018000200122>.
- [32] P. Bittencourt-César, B. Tronca, Uva Isabel como recurso para a transformação de um território e de uma região, in P. Bittencourt-César, C. Henriques, V. Herédia, L. Varela, M. Santos (Coords.), *Gastronomia e vinhos*, EDUCS, Brazil, 2020, pp. 182-195. <https://www.ucs.br/educs/arquivo/ebook/gastronomia-e-vinhos-contributos-para-o-desenvolvimento-sustentavel-do-turismo-estudos-de-caso-brasil-e-portugal/>
- [33] K. Hubbard, K. Mandabach, S. McDowall, D. VanLeeuwen, Perceptions of quality, satisfaction, loyalty, and approximate spending at an American Wine Festival, *Journal of Culinary Science & Technology*. 10(4) (2012) 337-351. <https://doi.org/10.1080/15428052.2012.735962>.
- [34] A. Hira, T. Swarts, What makes Napa Napa? The roots of success in the wine industry, *Wine Economics and Policy*. (2014). <http://dx.doi.org/10.1016/j.weo.2014.02.001>.
- [35] A. Hira, H. Gabreldar, US wine industry: following the Oregon Trail. *Prometheus*. 31(4) (2013) 369-386. <https://doi.org/10.1080/08109028.2014.933604>.
- [36] A. Gilinsky, S. Newton, T. Atkin, C. Santini, A. Cavicchi, A. Romeo, R. Huertas, Perceived efficacy of sustainability strategies in the US, Italian and Spanish wine industry, *International Journal of Wine Business Research*. 27(3) (2015) 164-181. <https://doi.org/10.1108/IJWBR-10-2014-0047>.
- [37] E. Byrd, J. Bhadury, S. Parker, Wine tourism signage programs in the USA, *International Journal of Wine Business Research*. (2017). <https://doi.org/10.1108/IJWBR-04-2017-0024>.
- [38] A. Duarte, Muscadines, wineries and value-added products: an exploratory study, *British Food Journal*. 113(2) (2011a) 322-337. <http://doi.org/10.1108/00070701111116419>.
- [39] R. Garibaldi, M. Stone, E. Wolf, A. Pozzi, Wine travel in the United States: A profile of wine travelers and wine tours, *Tourism Management Perspectives*. 23 (2017) 53-57. <https://doi.org/10.1016/j.tmp.2017.04.004>.
- [40] R. Schlüter, J. Norrild, Enotourism in Argentina: The power of wine to promote a region, in: A. Pansosso, L. Trigo (Eds.), *Tourism in Latin America*, Springer International Publishing, New York, 2015, pp. 71-84.
- [41] G. Rainer, The making of the “world’s highest wine region”: globalization and viticulture restructuring in Salta (NW Argentina), *Erdkunde*. 70(3) (2016) 255-269.
- [42] R. Hafner, G. Rainer, Resourcing Salta. Viticulture, soy farming, and the contested commodification of land, *Journal of the Geographical Society of Berlin*. 148(2-3) (2017) 121-133. <https://doi.org/10.12854/erde.v148i2-3.267>.
- [43] G. Lara, The Argentine wine industry: creating new spaces for coordination?, *Prometheus*. 31(4) (2013) 305-318. <https://doi.org/10.1080/08109028.2014.933603>.
- [44] G. Rainer, Constructing globalized spaces of tourism and leisure: Political ecologies of the Salta Wine Route (NW-Argentina), *Journal of Rural Studies*. 43 (2016), 104-117. <https://doi.org/10.1016/j.rurstud.2015.11.007>.
- [45] J. Overton, W. Murray, Playing the scales: Regional transformations and the differentiation of rural space in the Chilean industry, *Journal of Rural Studies*. 27 (2011), 63-72. <https://doi.org/10.1016/j.rurstud.2010.07.002>.
- [46] J. Overton, W. Murray, F. Pino, The remaking of Casablanca: the sources and impacts of rapid local

- transformation in Chile's wine industry, *Journal of Wine Research*. 23(1) (2012) 47-59. <https://doi.org/10.1080/09571264.2911.646253>.
- [47] C. Felzensztein, The Chilean wine industry: new international strategies for 2020, *Emerald Emerging Markets Case Studies*. 4(2) (2014) 1-12. <https://doi.org/10.1108/EEMCS-2014-2222>.
- [48] J. Torres, M. Kunc, Market opportunity recognition in the Chilean wine industry: traditional versus relational marketing approaches, *Journal of Wine Research*. 27(1) (2016) 19-33. <https://10.1080/09571264.2016.1144584>.
- [49] C. Felzensztein, M. Deans, Marketing practices in wine clusters: insights from Chile, *Journal of Business & Industrial Marketing*. 28(4) (2013) 357-367. <https://doi.org/10.1108/08858621311313947>.
- [50] E. Figueroa, E. Rotarou, Challenges and opportunities for the sustainable development of the tourism sector in Chile, *Journal of Wine Research*. (2018). <http://doi.org/10.1080/09571264.2018.1532880>.
- [51] M. Dalmoro, The formation of country wineries networks for internationalization: an analysis of two new world wine regions, *Journal of Wine Research*. 24(2) (2013) 96-111. <https://doi.org/10.1080/09571264.2012.747086>.
- [52] A. Fachinelli, F. Pauletto, K. Breunig, The value context in knowledge-based development: revealing the contextual factors in the development of Southern Brazil's Vale dos Vinhedos region, *Knowledge Management Research & Practice*. 16(1) (2018) 32-41. <https://doi.org/10.1080/14778238.2017.1405143>.
- [53] Á. De Oliveira, L. de Barros, D. Carvalho, M. Lopes, Behind the wine glass: values that guide consumption in Minas Gerais-Brazil, *British Food Journal*. 121(10) (2019) 2477-2489. <https://doi.org/10.1108/BFJ-05-2019-0329>.
- [54] V. Aparecida, J. de Moura, Shared brands and sustainable competitive advantage in the Brazilian wine sector. *International Journal of Wine Business Research*. (2018). <https://doi.org/10.1108/IJWBR-04-2017-0019>.
- [55] V. Aparecida, J. Engracia, J. Caldeira, Construction and operationalization of Sectorial Brands: The case of the Brazilian winemaking sector from the perspective of different stakeholders, *Wine Economics and Policy*. 7 (2018) 153-164. <https://doi.org/10.1016/j.wep.2018.10.001>.
- [56] S. Sehnem, D. Preschlack, N. Oly, R. Juarez, S. Santos, Circular economy in the wine chain production: maturity, challenges, and lessons from an emerging economy perspective, *Production Planning and Control*. (2019). <https://doi.org/10.1080/09537287.2019.1695914>.
- [57] A. Carneiro, J. Evaldo, F. Prévot, Internationalization of clustered companies and the influence of resources: a case study in Brazil and France, *Latin American Business Review*. 12(2) (2011) 123-141. <https://doi.org/10.1080/10978526.2011.592799>.
- [58] J. Macke, R. Vargas, K. Faccin, D. Genari, Social capital in collaborative networks competitiveness: the case of the Brazilian Wine Industry Cluster, *International Journal of Computer Integrated Manufacturing*. 26(1-2) (2015) 117-124. <https://doi.org/10.1080/0951192X.2012.681915>.
- [59] C. Pinto, E. Silveira-Martins, G. Jurak, C. Rosetto, C. Strategic positioning, differentiation, and performance of Brazilian wineries, *International Journal of Wine Business Research*. 32(2) (2020) 219-246. <https://doi.org/10.1108/IJWBR-11-2018-0068>.
- [60] J. Monticelli, I. Lapuente, S. de Vasconcellos, Coopetition and institutions: a strategy for Brazilian wineries facing internationalization, *International Journal of Wine Business Research*. (2016). <https://doi.org/10.1108/IJWBR-08-2016-0028>.
- [61] S. Anđelić, D. Garabinović, G. Šormaz, A review of wine and wine tourism presence in the scientific papers in journals in the field of tourism, *Economics of Agriculture*. (4) (2019) 1055-1090. <https://doi.org/10.5937/ekoPolj1904055A>.
- [62] M. Bonn, M. Cho, H. Um, The evolution of wine research: a 26year historical examination of topics, trends, and future direction, *International Journal of Contemporary Hospitality Management*. 30(1) (2018) 286-312. <https://doi.org/10.1108/IJCHM-09-2016-0521>.
- [63] I. Espejel, G. Arámburo, N. Badan, L. Carreño, A. Cota, G. Gutiérrez, L. Ibarra, C. Leyva, T. Moreno-Zulueta, L. Ojeda-Revah, L. Pedrín, C. Uscanga, M. Reyes-Orta, J. Ramírez, P. Rojas, J. Sandoval, C. Turrent, Á. Vela, I. Vaillard, The construction and sabotage of successful agricultural lands in semi-arid lands: A case study of vitivinicultural areas in Northern Mexico, in: S. Lucatello, E. Huber-Sannwald, I. Espejel, N. Martínez-Tagüena (Eds.), *Stewardship of future drylands and climate change in the global South*, Springer Climate, Cham, 2020, pp. 147-162.
- [64] K. Yelvington, L. Dillon-Sumner, J. Simms, Pleasure policies: debating development plans in Southern California's Wine Country, *Journal of Policy Research in Tourism, Leisure and Events*. 6(2) (2014) 95-118. <https://doi.org/10.1080/19407963.2014.926127>.

- [65] D. Hojman, P. Hunter-Jones, Wine tourism: Chilean wine regions and routes, *Journal of Business Research*. 65 (2012) 13-21. <https://doi.org/10.1016/j.busres.2011.07.009>.
- [66] R. Zárate, R. Barragán, Desarrollo de la oferta turística en la ruta del vino de Baja California (México), *Sotavento M.B.A.* (31) (2018) 80-91. <https://10.18601/01233734.n31.08>.
- [67] K. Ramos, O. Cuamea, J. Galván-León, Wine tourism: Predictors of revisit intention to micro, small and medium wineries on the Valle de Guadalupe wine route, Mexico, *International Journal of Wine Business Research*. 32(1) (2020) 22-40. <https://doi.org/10.1108/IJWBR-11-2018-0065>.
- [68] J. Torres, J. Barrera, M. Kunc, S. Charters, The dynamics of wine tourism adoption in Chile, *Journal of Business Research*. (2020). <https://doi.org/10.1016/j.busres.2020.06.043>.
- [69] M. Kunc, Wine tourism: a review of the Chilean case, *International Journal of Tourism Policy*. 3(1) (2010) 51-61. <https://doi.org/10.1504/IJTP.2010.031602>.
- [70] D. De Jesús-Contreras, H. Thomé-Ortiz, Patrimonio enogastronómico en el centro de México. Estetización y autenticación como mecanismos de apropiación turística, *Anthropology of Food*. (13) (2018). <https://doi.org/10.4000/aof.8333>.
- [71] D. De Jesús-Contreras, H. Thomé-Ortiz, F. Xavier, Enoturismo y promoción del territorio. Análisis comparativo entre el nuevo y el viejo mundo del vino, *Revista Pasos*. 18(3) (2020). <https://doi.org/10.25145/j.pasos.2020.18.032>.
- [72] M. Robles, M. Robles, Análisis de la potencialidad del turismo en la Zona Norte de México, *Journal of Tourism & Heritage Research*. 1(2) (2018) 57-69.
- [73] E. Sohn, J. Yuan, Who are the culinary tourists? An observation at a food and wine festival, *International Journal of Culture, Tourism and Hospitality*. 7(2) (2013) 118-131. <https://10.1108/IJCTHR-04-2013-0019>.
- [74] J. Bruwer, K. Kelley, Service performance quality evaluation and satisfaction in a USA wine festivalscape, *International Journal of Event and Festival Management*. 6(1) (2015) 18-38. <https://doi.org/10.1108/IJEFM-04-2014-0009>.
- [75] V. Quintal, B. Thomas, I. Phau, Incorporating the winescape into the theory of planned behavior: Examining “new world” wineries, *Tourism Management*. 46 (2015) 596-609. <https://doi.org/10.1016/j.tourman.2014.08.013>.
- [76] N. Singh, Y. Hsiung, (2016). Exploring critical success factors for Napa’s wine tourism industry from a demand perspective, *Anatolia*. (2016). <https://doi.org/10.1080/13032917.2016.1160414>.
- [77] K. Faccin, D. Genari, J. Macke, Interorganisational social capital and innovation: a multiple case study in wine producers’ networks in Serra Gaúcha, *Revista de Administração e Inovação*. (2016). <https://doi.org/10.1016/j.rai.2016.12.002>.
- [78] G. Sarturi, C. Franca, J. Gama, S. Aparecido, Competitiveness of clusters: A comparative analysis between wine industries in Chile and Brazil, *International Journal of Emerging Markets*. 22(2) (2016) 190-213. <https://doi.org/10.1108/IJoEM-11-2013-0195>.
- [79] J. Rojas-Méndez, M. Rod, Chilean wine producer market orientation: comparing MKTOR versus MARKOR, *International Journal of Wine Business Research*. 25(1) (2013) 27-49. <https://10.1108/17511061311317291>.
- [80] A. Duarte, The red-headed stepchild of wine? Marketing muscadine wines in the Southern USA, *British Food Journal*. 113(10) (2011b) 1290-1304. <https://doi.org/10.1108/00070701111177692>.
- [81] V. López, C. Sotelo, Los vinos del Valle de Guadalupe: Análisis de su comercialización, *European Scientific Journal*. 10(4) (2014) 90-106.
- [82] J. Bruwer, M. Pratt, A. Saliba, M. Hirche, Regional destination image perception of tourists within a winescape context, *Current Issues in Tourism*. (2014). <http://dx.doi.org/10.1080/13683500.2014.904846>.
- [83] A. Duarte, Muscadine wines, wineries, and the hospitality industry, *British Food Journal*. 113(3) (2011c) 338-352. <https://doi.org/10.1108/00070701111116428>.
- [84] A. Gilinsky, S. Lee, R. Fuentes-Hernández, An exploratory study of wine business philanthropy in the USA, *International Wine of Business Research*. (2018a). <http://doi.org/10.1108/IJWBR-01-2017-0006>.
- [85] A. Gilinsky, S. Newton, R. Eyler, Are strategic orientations and managerial characteristics drivers of performance in the US wine industry?, *International Journal of Wine Business Research*. (2018b). <http://doi.org/10.1108/IJWBR-08-2016-0029>.
- [86] J. Olsen, L. Thach, L. Hemphill, The impact of environmental protection and hedonist values on organic wine purchases in the US, *International Journal of Wine Business Research*. 24(1) (2012) 47-67. <https://doi.org/10.1108/17511061211213783>.
- [87] P. Lacoste, M. Aranda, J. Matamala, E. Premat, K. Quinteros, N. Soto, J. Gaete, J. Rivas, M. Solar, Grape crushing and traditional wine presses in

- Chile and Argentina (1550-1850), *Atenea*. 503 (2011) 39-81.
- [88] K. Winkler, K. Nicholas, More than wine: cultural ecosystem services in vineyard landscapes in England and California, *Ecological Economics*. 124 (2016) 86-98. <https://doi.org/10.1016/j.ecolecon.2016.01.013>.
- [89] F. Silva, A. Scavarda, M. Sellito, D. Lopes, Sustainability in the winemaking industry: an analysis of Southern Brazilian companies based on a literature review, *Journal of Cleaner Production*. (2018). <https://doi.org/10.1016/j.clepro.2018.04.253>.
- [90] L. Bardin-Camparotto, M. Pedro, G. Constantino, J. Hernandez, (2014). Sistema geovítica para a produção de uvas para vinho na região do circuito das frutas-SP, *Revista Brasileira de Fruticultura*. 36(4) (2014) 900-908. <https://doi.org/10.1590/0100-2945-377/13>.
- [91] E. Marola, J. Schöpfner, C. Gallemore, K. Jespersen, The bandwidth problems in telecoupled systems governance: Certifying sustainable winemaking in Australia and Chile, *Ecological Economics*. 171 (2020) 1-12. <https://doi.org/10.1016/j.ecolecon.2020.106592>.
- [92] L. Mendoza-Espinoza, J. Burges, L. Daesslé, M. Villada-Canela, Reclaimed water for the irrigation of vineyards: Mexico and South Africa as case studies, *Sustainable Cities and Society*. 51 (2019) 1-10. <https://doi.org/10.1016/j.scs.2019.101769>.
- [93] K. Nicholas, W. Durham, Farm-scale adaption and vulnerability to environmental stresses: insights from wine-growing in Northern California, *Global Environmental Change*. 22 (2012), 483-494. <https://doi.org/10.1016/j.gloenvcha.2012.01.001>.
- [94] A. Mueller, C. Damacena, C. Vaz, The xenocentrism scale in Brazil: validation with wine consumers, *International Journal of Wine Business Research*. 32(3) (2020) 423-440. <https://doi.org/10.1108/IJWBR-05-2019-0035>.
- [95] L. Meraz-Ruiz, Preferences in wine consumption in Mexico, wine tourism, and chances of success for winemakers' entrepreneurs, *Revista turismo estudios e prácticas*. 6(1) (2017).
- [96] C. Yue, R. Govindasamy, Mid-Atlantic wine tourism consumer preference: an econometric approach, *International Journal of Wine Business Research*. 31(3) (2019) 327-343. <https://doi.org/10.1108/IJWBR-03-2018-0011>.
- [97] L. Meraz-Ruiz, V. González, E. Díaz, Influencia de las emociones en la compra de vino por enoturistas en el nuevo mundo del vino: El caso de México, *Cuadernos de turismo*. (44) (2019) 277-302. <https://doi.org/10.6018/turismo.44.404841>.
- [98] D. Moscovici, R. Rezwanul, R. Mihailescu, J. Gow, A. Ugaglia, L. Valenzuela, A. Rinaldi, Preferences for eco-certified wines in the United States, *International Journal of Wine Business Research*. (2020). <http://doi.org/10.1108/IJWBR-04-2020-0012>.
- [99] A. Duarte, M. O'Neill, Imagery and consumption of wine: A Southern United States case study, *Journal of Food Products Marketing*. 18(4) (2014) 306-324. <http://doi.org/10.1080/10454446.2012.684640>.
- [100] A. Duarte, M. O'Neill, Consumption of muscadine grape by-products: an exploration among Southern US consumers, *British Food Journal*. 114(3) (2012) 400-415. <https://doi.org/10.1108/00070701211213492>.
- [101] L. Thach, S. Riewe, A. Camillo, Generational cohort theory and wine: analyzing how gen Z differs from other American wine consuming generations, *International Journal of Wine Business Research*. (2020). <http://doi.org/10.1108/IJWBR-12-2019-0061>.
- [102] M. Bauman, C. Taylor, An exploratory study on Texas wine club members' intention to remain, *International Journal of Wine Business Research*. 32(1) (2019) 41-58. <https://doi.org/10.1108/IJWBR-08-2018-0043>.



Citation: Peter Hayes, Nicola Marinelli (2022) A family business in the global market between tradition and innovation: an interview with Mireia Torres Macsazzek. *Wine Economics and Policy* 11(1): 141-144. doi: 10.36253/wep-13208

Copyright: © 2022 Peter Hayes, Nicola Marinelli. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/wep>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

A family business in the global market between tradition and innovation: an interview with Mireia Torres Macsazzek

PETER HAYES¹, NICOLA MARINELLI^{2,*}

¹ *Honorary President of OIV; E-mail* grapwine@senet-com.au

² *DAGRI - University of Florence, Ple delle Cascine 18, 50144 Firenze, Italy. E-mail:* nicola.marinelli@unifi.it

*Corresponding author.

Abstract. Mireia Torres Macsazzek is head of the Familia Torres Innovation and Knowledge Department and has been involved in her family's business since 1999 after an education in chemical engineering, viticulture and oenology. She is also President of Plataforma Tecnológica del Vino (PTV), a body that serves as a meeting point for RDI executives in the Spanish wine sector. In this interview she shares her perspectives on business driving forces and critical aspects, especially related to the funding and implementation of Innovation programmes and the keys to drive the business into the future.

Keywords: wine business, family, tradition, innovation, RDI, interview.

PHNM: Mireia, we very much welcome the opportunity to undertake this interview and appreciate the time and commitment you have assigned to this, within your very diverse roles and responsibilities within the family business, *Familia Torres* winery, and across into industry leadership, notably via *PTV, Asociación Plataforma Tecnológica del Vino*. Likewise, we recognise the very serious impacts that the COVID pandemic has imposed on individuals, families, businesses, and nations, so we express our best wishes and added thanks for your contribution in such challenging times.

One might have anticipated that your family background would lead you naturally to a career within the wine business, but we understand that this was not necessarily so. Perhaps you might outline a picture of your formative influences from family and schooling that established your early interests and underpinned your educational and career paths?

MT: My family has been involved in the wine sector for five generations. In fact, two years ago, we celebrated our 150th anniversary. My father, Miguel A. Torres, had a huge influence on me when I finished my Chemical Engineering training in Barcelona. He convinced me to study Viticulture and Oenology in Montpellier. Once there, I liked it so much that I decided to dedicate my professional career to wine.

PHNM: We note that your early, technically directed training, initially in Chemical Engineering complemented by specialist studies in Viticulture and Oenology, was then further reinforced with a PDD (Programa de Desarrollo Directivo) in IESE and a Master in innovation and entrepreneurship, while holding your present position of Innovation & Knowledge Director at *Familia Torres*; you have also held roles in R&D, as winemaker, and as both technical and production director. Given that *Familia Torres*, is a long-established family company, within a traditional industry sector, to what people and driving factors do you attribute the very effective – but not so usual – embrace of the ‘new’ and complementarity of tradition and innovation?

MT: I think that the family philosophy of hard work, non-conformism, and resilience has marked the direction of the business over the years. My father has been an important source of inspiration for the fifth generation. His work capacity, negotiation skills, and determination, as well as his vision of the future, have had a huge impact on us all. The family understands the need to innovate. Even my grandfather, in his time, was a visionary and one of the pioneers behind wine export and brand registration, both aspects were extremely appealing to tourists to Spain. My father was also a major driving force behind the changes in the expansion of the company and the creation of fine, premium wines, such as Mas La Plana, made from international varieties. Innovation also plays an important role today in studying environmental changes, as well as social trends and demands. Understanding change enables you to understand and predict how it will affect consumption patterns and wine quality. The problem with innovation is getting shareholders to understand that not every experiment or pilot test are going to give positive results and that you need to be patient because some projects involving vines can easily entail a decade of research.

PHNM: Might you also amplify just how *Familia Torres* utilises the conjunctive forces of tradition and innovation within its PR and Marketing, and where messages or trends from the market inform fresh R&D, and product or process innovation? How tightly are the factors within this cycle linked, and what is the key to effective, enduring innovation across technical, production, marketing and the broad issues of resource use and sustainability?

MT: Fundamentally, *Familia Torres*’s message is closely linked to tradition, the land, sustainability, regenerative viticulture, and a return to ancestral wisdom. We carry out numerous projects from the area of innovation that help to improve quality, costs, process efficiency, sustainability, digitalization, consumer knowl-

edge, etc. yet very few directly address the product. Since I began in innovation, there have only been two projects directly linked to the end-product; one focusing on recovering ancestral varieties with the objective of making exceptionally unique wines and the other on dealcoholized wines.

At the moment, the innovation process works in the following way. First, innovation priorities are decided by the CEO, and then projects and resources are discussed. The scope of the area of innovation is wide-ranging. Every area of the company has resources to carry out projects, which are the responsibility of the area director. The Innovation & Knowledge Department provides support to promote projects in all areas in the form of assistance and funding. It also looks for synergies and writes business plans when needed. Every project is assessed by a steering committee.

PHNM: Allowing that your prime experience is within a privately held, family business, you have nevertheless extensive contact and engagement with many others in the sector, including within your role as President of *PTV* and noting you are also Vice President of *INNOVI*, the Catalan wine cluster. What do you identify as the essential differences between family and public corporate business regarding objectives, successional matters, longevity of investment cycle etc. and are any such differences of significance in advancing or constraining innovation, adaptation, and competitiveness of individual businesses, and more significantly the wine sector itself?

MT: I think, in general, that a family-run business transmits certain values and, from my point of view, is more committed to society and its surroundings than a public corporate business. What’s more, the business vision is usually long term and there is strong commitment from family members. However, a family-run business can also be complex as it combines personal or family and professional aspects. Moreover, as new generations get more involved and the number of stakeholders increases, the difficulty in understanding and accepting certain business management policies can lead to disagreement. According to the figures, 70% of family-run businesses do not get past the second generation and 20% of those that do make it, disappear within the third generation.

PHNM: This leads us then to addressing questions around the structure, function and effectiveness of research funding and the delivery of R&D + Innovation for the benefit of the Spanish wine sector.

Could you please outline the key challenges facing the broad Spanish wine sector and what key strategic themes or programmes are being promoted and facilitat-

ed through *PTV* – in other words, what are the priority themes and why are they best executed by *PTV*?

MT: In Spain, according to the latest COTEC report, 1.4% of GDP is targeted at RDI while in other countries such as South Korea and Israel that figure is 4.5%, 3.4% in Taiwan, 3.1% in Germany, 2.8% in the US, 2.4% in China... Europe wanted it to be at 3% by 2020 but the objective has not been reached. However, what is even more worrying is that Spain is at the bottom of the OECD and EU ladder when it comes to RDI investment. Even countries like Greece, Hungary, Portugal, Poland, and the Czech Republic are ahead of us.

We have to bear in mind that while the wine sector in Spain invoices 6.5 bn euros per year and that the whole sector represents 1% of GDP, since 2018, it has also been investing a minimum of 130-150 million euros per year in RDI. That represents around 23-26% of investment in R&D in the agrifood sector and 0.94-1.08% of domestic investment in R&D. It is important to highlight that the figure is higher than the domestic average for the agrifood sector (0.64%) and higher than the average of the EU-28 (0.69%) as regards GVA. So, basically, the wine sector represents approximately over 5% of R&D investment in the food and drink sector, and 1% of RDI investment in Spain.

Moreover, it also needs to be highlighted that it is exceedingly difficult to promote innovation in the wine sector because it is highly fragmented.

The *PTV* wine technology platform gives priority to boosting projects and the transfer of knowledge to the sector through webinars and training sessions. It is also in conversation with the pertinent public authorities to communicate the needs of the sector every four years through the strategic agenda. The main priorities, at the moment, relate to digitalization, sustainability, circular economy, and adapting to climate change. The *PTV* has the financial support of the Spanish Wine Interprofessional Organization (OIVE) and the support of the Spanish Wine Federation (FEV), as well as national public financial entities (CDTI, AEI, MICIN, MAPA, INE, etc.) and regional innovation agencies.

PHNM: From these *PTV* initiatives, what lessons has industry learnt regarding the translation of RDI into Business Innovation and Competitive Advantage---commercial, social, reputational---and which comes first from an ESG or CSG perspective? Just who can and does initiate such developments? Is it primarily individual operations or perhaps regional groups or clusters such as *INNOVI*?

MT: In general, Spain lacks policies that promote innovation, and there is also a lack of investment from the majority of businesses. There is a need to enhance

the transfer of knowledge from research centres to businesses. Associations such as *PTV* at a domestic level and clusters such as *INNOVI* help to revitalize and change the vision of innovation in companies within the sector.

PHNM: Recognising that this Journal has a focus upon wine economics and policy do you have a view on the role and potential of research and innovation in economics, policy, marketing, and new product development to meet changing global conditions, social demands and new consumers? How do we best deploy public, pre-competitive research in these areas and translate these into both private and public benefit?

MT: From my perspective, we should take advantage of the momentum created by digitalization to capture data from social networks about what consumers/clients want and use it to identify new trends. When a company creates a new business model or product, if it works, others will follow.

I believe that a good way to study the viability of technology is by improving innovation policies and encouraging collaboration between businesses and research centres (partly funded by the authorities). The aim should be to increase revenue and create a new, interesting business model.

PHNM: It is impossible to ignore the local and global impact of the COVID pandemic. We wonder if you have any brief comments on the potential longer-term impact on the way the sector prepares for crises, anticipates future market and social trends, and prepares itself to be both resilient and agile in the future; you may (or likely have) addressed this, at least in part, in our previous question...

MT: In Spanish, we also have the saying “every cloud has a silver lining” and this has been the case with COVID. This exceptionally complicated situation created many challenges for people and businesses alike. However, I believe that it has changed us all. It has made us more resilient. It has also speeded up digitalization, which has prompted changes in our habits, our way of working, of relating to each other, our demands, consumer demands...

Many of the recent innovation projects are linked to new technologies brought about by digitalization such as drones, satellite imaging, IoT sensors, predictive algorithms, robotics, digital twin and blockchain.

Of all the family wineries, the pandemic had the most impact on the one I manage personally, Jean Leon, a modest winery in Penedès that used to sell over 70% of its products on the domestic market – in the hospitality sector alone. Then our sales fell by 50%! At the beginning, we were really concerned, but then we quickly responded to the situation. The whole team got together

with distributors in workshops to create a 5-year business plan. Once approved, the whole group has been following it like clockwork. I love to see the team happy with the changes we are making and motivated by the project. It is one of the things that gives me most satisfaction.

PHNM: We must look to close this interview, but would like to ask how you manage to balance your intense professional activities on behalf of the family company and the industry, with your personal interests. You have evidently strong multicultural engagement, socially and linguistically, and are involved in wider Foundation activity such as *Fundación Familia Torres* with its focus on protection of children and the well-being of people, promoting education and social integration.

Perhaps you might note some of the achievements of the Fundación, but also ask, can you and do you find avenues to integrate, yet balance your public and personal life while finding time and energy for personal diversions and relaxation?

MT: The *Fundación Familia Torres* was founded by my grandparents in 1986 and has funded projects, in Spain and around the world, mostly associated with children, although in recent years it has also funded projects focused on empowering women, which fills me with satisfaction. Since 1986, we have collaborated on over 400 projects with NGOs in 12 countries. The link to the website is <https://fundacionfamiliarotorres.org/>.

I have a 23-year-old daughter and a 22-year-old son, and both are engineers. My principal hobby is tennis, but I also enjoy cooking. I love cooking for family and friends.

PHNM: Mireia, our thanks for your contribution to the Journal. Your heavy involvement and high responsibilities in both the private and public side of the business make your perspective invaluable for our readers and for the further development of the debate about the role of tradition and innovation and their interaction in the wine sector.

Finito di stampare da
Logo s.r.l. - Borgoricco (PD) - Italia



Table of contents

Vasco Santos, Alvaro Dias, Paulo Ramos, Arlindo Madeira, Bruno Sousa The influence of wine storytelling on the global wine tourism experience	3
Mikael Oliveira Linder, Katia Laura Sidali, Christian Fischer, Valerie Bossi Fedrigotti, Diego Begalli, Gesa Busch Assessing preferences for mountain wine and viticulture by using a best-worst scaling approach: do mountains really matter for Italians?	15
Linda Bitsch, Barbara Richter, Jon H. Hanf The competitive landscape in transitioning countries: the example of the Armenian wine industry	31
Elena Barbierato, Iacopo Bernetti, Irene Capecchi What went right and what went wrong in my cellar door visit? A worldwide analysis of TripAdvisor's reviews of Wineries & Vineyards	47
Filippo F. Fagioli, Giorgia Gallesio, Elena Viganò Wineries communication strategies. A text mining analysis	73
Giulia Gastaldello, Florine Livat, Luca Rossetto Does Covid scare wine travelers? Evidence from France and Italy	89
Giacomo Del Chiappa, Juan Carlos Martín, Concepcion Román Developing wine tourism experiences. A discrete choice analysis using best-worst scaling data	107
Luis Felipe García-Rodea, Humberto Thomé-Ortiz, Angélica Espinoza-Ortega, Pedro de Alcântara Bittencourt-César Viniculture and Tourism in the New World of Wine: a literature review from the American continent	127
Peter Hayes, Nicola Marinelli A family business in the global market between tradition and innovation: an interview with Mireia Torres Macsazek	141