

## DIGITAL STRATEGIES IN THREE PORTUGUESE WINE REGIONS DURING COVID-19: AN EXPLORATORY STUDY

Rafeal MADEIRA<sup>1</sup>, Goreti BOTELHO<sup>2</sup>, Madalena ABREU<sup>3</sup>

<sup>1</sup> Polytechnic University of Coimbra, Coimbra Business School | ISCAC, Bencanta, 3045-601 Coimbra, Portugal; CEOS.PP Coimbra, Portugal.

<sup>2</sup> Polytechnic University of Coimbra, Rua da Misericórdia, Lagar dos Cortiços, S. Martinho do Bispo, 3045-093 Coimbra, Portugal

<sup>3</sup> Research Center for Natural Resources, Environment and Society (CERNAS), Polytechnic University of Coimbra, Bencanta, 3045-601 Coimbra, Portugal

### RESEARCH ARTICLE

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#### Abstract

*The present study aims to analyze and understand the measures taken regarding the communication and distribution of wine in the Portuguese demarcated regions of Bairrada, Beira Interior, and Dão during the COVID-19 pandemic. This research focuses on these three wine-producing regions to assess the impact of the pandemic on the regional wine market and the strategies and marketing actions adopted to overcome the potential problems caused by the pandemic. For data collection, a qualitative questionnaire with 12 open-ended questions was sent and answered by representatives of the three Regional Wine Commissions targeted in this study. The results highlight the importance of digital transformation, flexible communication strategies, and the diversification of distribution channels for the resilience of wine regions during crisis situations. From a managerial perspective, wine sector stakeholders should continue investing in digital marketing tools, online sales platforms, and social media engagement to maintain direct contact with consumers.*

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**Keywords:** (max. 5) Wine communication, COVID-19 Pandemic, Digital marketing, Distribution channels.  
#Corresponding author: Madalena Abreu, [madalenaabreuportugal@gmail.com](mailto:madalenaabreuportugal@gmail.com)

#### INTRODUCTION

The COVID-19 pandemic between 2020 and 2023 (WHO, 2023) led to a complete restructuring and transformation of the way wine products were communicated and distributed, in order to ensure their continued availability to consumers. Within this context of a global health crisis, the wine sector was forced to reinvent itself.

The pandemic reshaped marketing strategies across multiple industries, including the wine sector. For the Regional Wine Commissions of Bairrada, Beira Interior, and Dão, these principles guided their responses to the crisis. Marketing has thus become a critical tool for maintaining competitiveness and consumer connection, particularly through digital communication. According to Kotler et al. (2021), the emergence of Marketing 5.0 signifies the integration of advanced technologies to mimic human behavior and enhance the delivery of value throughout the customer journey. The pandemic accelerated the adoption of such digitally driven strategies,

as traditional communication and distribution channels were disrupted.

In the realm of communication, Oliveira (2023) defines marketing communication as the strategic delivery of messages to influence consumer perceptions and behaviors. Distribution, as part of the marketing mix (Booms and Bitner, 1981; Kotler et al., 2021), became one of the most transformed pillars. The shift to e-commerce, reinforced by logistical partnerships and take-home delivery models, proved essential. Regions adapted rapidly to provide online purchasing options and invested in logistical infrastructure to ensure continuity of service. Gartner (2024) also highlighted how artificial intelligence and digitalization are transforming the marketing landscape, reinforcing the importance of authenticity, transparency, and user-centered approaches.

Wine tourism, previously reliant on in-person visits and tastings, also had to evolve. As noted by Kastenholz et al. (2022) and Niklas et al. (2022), wineries introduced safer and more sustainable experiences such as guided vineyard walks and virtual tastings, which

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preserved consumer engagement while aligning with public health concerns. Indeed, the global wine market had to become more virtual (Catarino, 2020), with actions including examples such as online wine tastings and the creation of websites for small and medium-sized enterprises.

But above all, the wine sector had to make a strong investment in building an e-commerce network (Bertoque and Bastos, 2022). The pandemic encouraged wineries to explore new ways of attracting tourists to rural areas, such as vineyard walks and outdoor guided tours, offering safe and authentic experiences to visitors (Niklas et al., 2022). Wineries that adopted a more flexible and creative mindset were able to face the challenges imposed by the pandemic more effectively, by diversifying their distribution channels and implementing marketing strategies that directly addressed consumers' needs and preferences (Cerezo et al., 2023). Communication in the context of marketing can be defined as the strategy of conveying relevant messages and information about products, services, or brands to the target audience, with the goal of influencing their perceptions, attitudes, and behaviors toward the given offering (Oliveira, 2023). It is an essential tool for building relationships, increasing product awareness, stimulating consumer interest, and ultimately driving sales and business growth (Kotler and Keller, 2012). Besides, in marketing, distribution is one of the four main strategies known as the "5P's" (Booms and Bitner, 1981) of the marketing mix, alongside product, price, promotion, and people (McCarthy and Perreault, 1990). Distribution is thus responsible for delivering the right product to the right place, at the right time, and in the right quantity, ensuring that it is available and accessible to the target audience (Kotler et al., 2021).

Interestingly, the wine market stood out as one of the few sectors to exhibit resilience and even achieve positive results amidst the global crisis. For example, Portugal saw a 6.4% growth in wine exports in 2020 compared to 2019, and an additional 4.7% growth in 2021 (IVV, 2024). The Beira Interior region experienced a 6.1% drop in domestic consumption in 2020 but rebounded with a remarkable 14.2% growth in 2021. Similarly, Bairrada and Dão exceeded pre-pandemic consumption levels by the second year of the crisis. This study examines these successes, and the innovative strategies adopted in response to

the pandemic, focusing on three of Portugal's most notable wine-producing regions. In fact, the pandemic, an unforeseen and unprecedented global event, provides a compelling subject for analysis, particularly regarding the decisions and actions taken by the wine entities of Portugal's Demarcated Regions of Bairrada, Beira Interior, and Dão.

Given this data, the main objective of this work was to do a comparative qualitative assessment of the impact of the pandemic on the wine communication and distribution strategies in Bairrada, Beira Interior, and Dão Portuguese wine regions

## **MATERIAL AND METHOD**

The present study adopted a qualitative and exploratory approach, using a convenience sample. An original questionnaire was structured into several sections addressing the following topics:

Impact of the pandemic: Difficulties faced during the pandemic, including supply chain disruptions and changes in demand;

Adaptations and strategies: Measures adopted by organizations to mitigate the negative effects of the pandemic, such as changes in distribution channels, innovations in production, and marketing strategies;

Sales and consumption: Analysis of wine sales before, during, and after the critical periods of the pandemic;

Future perceptions: Expectations and forecasts regarding the market's recovery and possible long-lasting changes in consumer behavior.

The fully structured questionnaire, comprising 12 questions, was distributed electronically to representatives of the Regional Wine Commissions from the Portuguese wine regions of Bairrada, Beira Interior, and Dão, following their prior consent to participate in this exploratory qualitative study. The period under analysis covered the COVID-19 pandemic, from March 2020 to March 2023. The questionnaires were sent and the responses were collected by email at the beginning of 2024.

## **RESULTS AND DISCUSSIONS**

Bairrada (including "Bairrada" Protected Designation of Origin and "Beira Atlântico" Protected Geographical Indication), in Portugal, is the country's largest sparkling wine-producing region (IVV, 2024). It is situated

between Águeda and Coimbra, delimited to the north by the Vouga River, to the south by the Mondego River, to the east by Caramulo and Buçaco mountains, and to the west by the Atlantic Ocean. It is a predominantly flat region, where vineyards rarely exceed 120 meters in altitude and due to its terrain and proximity to the ocean, it experiences a mild climate strongly influenced by maritime conditions.

The Beira Interior region is situated in the interior of northern Portugal, near the border with Spain, in one of the most escarped and mountainous areas of mainland Portugal. It includes the hills of Marofa, Gardunha and part of the Serra da Estrela. The climate has an extreme continental influence, with marked day-to-day temperature variation, short, hot and dry summers and prolonged cold winters. Soils are predominantly granitic, with some presence of schist and, less commonly, sandy components. The DO Beira Interior can be divided into three sub-regions, Castelo Rodrigo, Pinhel and Cova da Beira. The first two, Castelo Rodrigo and Pinhel, share approximately the same natural characteristics, although being separated by mountain-chains with peaks above 1,000 metres. In these areas, the combination of poor soil, high acidity and robust maturation suggests a promising future for the region.

The geographical area of the DO “Dão” is in north-central Portugal, in a mountainous recess surrounded by the summits of Caramulo and Buçaco to the west, and the imposing Serras da Nave and Estrela to the east and south, forming an important barrier to the humid air masses from the coast and the continental winds. Here, the vineyards grow at altitudes of 400-500 meters, reaching up to 800 meters, on granite soils of poor fertility, and schistose grounds towards south. The climate is temperate, although quite cold and rainy in winter, and very dry and hot in the summer (IVV, 2024).

The wine market in Portugal is one of the most significant sectors in terms of employment, business volume, and added value generated for the country (Cabo and Ribeiro, 2019).

The Regional Wine Commissions (RWC) existing in Portugal correspond to the wine regions of Vinhos Verdes, Bairrada, Alentejo, Algarve, Beira Interior, Lisboa, Península de

Setúbal, Trás-os-Montes, Dão, Tejo and Açores (IVV, 2018).

The Bairrada Wine Commission (CVB, Comissão Vitivinícola da Bairrada) has the following main mission: contribute to increasing the value and recognition of the protected collective brands DO Bairrada and IG Beira Atlântico (as well as their sub-regions) in both national and international markets, based on their origin and authenticity; Carry out the control and certification of products entitled to DO Bairrada and IG Beira Atlântico; Promote and publicize certified products; Encourage the optimal use of production potential by fostering research and dissemination of methods and tools aimed at the qualitative improvement of products to be certified at all stages of production, winemaking, and commercialization, while promoting the use of sustainable practices (CVB, 2026).

The Beira Interior Wine Commission (CVRBI, Comissão Vitivinícola Regional da Beira Interior) has as its mission the certification, control, and promotion of wine products entitled to the Beira Interior Denomination of Origin (DO) and the Terras da Beira Geographical Indication (IG); and its vision is to increase the recognition and visibility of Beira Interior Wines, always maintaining the rigor and credibility required of this organization, as well as assisting producers in expanding their presence in the national market and in strategic international markets with distinctive wines, providing consumers with consistently high quality (CVRBI, 2022).

The Dão Wine Commission (CVR Dão, Comissão Vitivinícola Regional do Dão) is responsible for controlling origin, ensuring authenticity, and promoting wine products entitled to the Dão and Lafões Denomination of Origin and the Terras do Dão Geographical Indication. Its mission is to meet stakeholders’ needs and expectations by ensuring compliance with established specifications through an economical, effective, and dynamic management system (CVR Dão, 2021).

From our study, Table 1 presents a summary of the main marketing strategies reported in the Bairrada, Beira interior and Dão regions.

**Table 1. Comparison of the main marketing strategies among the Bairrada, Beira Interior and Dão regions.**

| Bairrada region | Beira Interior region | Dão region |
|-----------------|-----------------------|------------|
|-----------------|-----------------------|------------|

|                                                                                           |                                                                                            |                                                                                                              |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Emphasis on communicating resilience and safety, focusing on the quality of its products. | Promotion of rural wine tourism, highlighting the safety and tranquility of the region.    | Highlighting the quality and authenticity of local wines, promoting an emotional connection with the region. |
| Investment in digital channels, including social media and online sales.                  | Focus on virtual experiences and marketing for specific niches.                            | Partnerships with digital influencers to increase visibility.                                                |
| Creation of campaigns that highlight the history and tradition of the region's wines.     | Development of digital content, such as workshops and live sessions, to attract consumers. | Digital campaigns and discounts on online purchases to attract new customers.                                |
| Focus on digital events, such as online wine tastings, to maintain consumer interest.     | Integration of e-commerce platforms to expand the consumer base.                           | Adjustments in production to meet the growing demand for wines sold online.                                  |
| Establishment of logistical partnerships for direct delivery to the end consumer.         | Implementation of personalized deliveries and promotion on social media.                   | Expansion of presence in marketplaces and promotion of wines through online stores.                          |

The COVID-19 pandemic brought significant challenges to many sectors of the global economy, but it also provided unique opportunities for innovation and growth in some industries. A notable example is the wine regions of Bairrada, Beira Interior, and Dão in Portugal, which showed growth during these difficult times, mainly due to their decisive investment in digital channels and online stores.

In January 2021, amid the pandemic, the Beira Interior region launched a virtual store dedicated to selling its wines. Although this occurred almost a year after the start of the pandemic crisis, this initiative had a positive impact. The quick adaptation to e-commerce allowed Beira Interior to reach new markets and expand the reach of its wines, providing an agile response to changes in consumer behavior during the pandemic.

Additionally, the region invested in virtual wine tasting experiences, offering wine enthusiasts the opportunity to explore its products interactively and safely from their homes. This innovative approach not only kept consumers engaged but also attracted new audiences interested in Beira Interior wines.

A key factor supporting this digital progress was collaboration with producers and digital influencers from the wine world, with sommelier António Lopes standing out. António Lopes became a prominent figure in the Portuguese wine scene, acting as an ambassador for the Beira Interior wine region. His social media presence and specialised knowledge contributed to promoting the

notoriety and reputation of wines from this region.

Furthermore, the Beira Interior Wine Commission intensified its digital presence during the pandemic. It increased interaction with the public, becoming more active and frequent on social media. Their posts became more engaging and interactive, offering relevant and interesting content about the wine region and its wines, with messages conveyed in both Portuguese and English to reach multiple target audiences.

In summary, Beira Interior demonstrated resilience and adaptability during the COVID-19 pandemic crisis, effectively leveraging digital channels to drive growth and visibility for its wines. This success highlights not only the importance of innovation during challenging times but also the unique ability of Portugal's wine industry to reinvent itself and thrive in the face of adversity.

While other regions, like Beira Interior, significantly improved their communication channels during this period, the Bairrada Wine Commission only completed the restructuring of its website in 2023. This resulted in content that was sometimes less attractive compared to other wine regions, as well as issues with its online store, affecting the region's ability to sell its products directly.

During the COVID-19 pandemic, the Bairrada Demarcated Region faced significant challenges due to its heavy reliance on sparkling wines, which account for around 80% of its wine production. With the widespread closure

of sales and consumption spaces, the demand for sparkling wines dropped considerably, reflecting tough years for producers in the region. Despite already having an online store, it had to be reinforced and restructured for more modern times. The region also invested in physical spaces which, alongside the existing virtual ones, provided safety and comfort to consumers. It also organized virtual tastings of Bairrada wines and sparkling wines through its digital channels, with producers and leaders from the Bairrada Wine Commission participating as the main figures.

During the COVID-19 pandemic, the Dão Demarcated Region faced similar challenges due to its predominantly large wine companies, some of which are well-known. This context affected wine consumption in the region, with a decline in demand that was quickly recovered. Consumers, in search of new experiences and variety, turned to interior regions, as was the case with Dão.

Dão, known for producing elegant red wines and fresh whites, saw a decline in sales

during the pandemic, like all regions. The preference for wines from different markets, especially those made from old vines and grown at higher altitudes, reflected the trend of discovering new products.

Although Dão maintained its reputation for quality and excellence in wine production, competition for market share during the pandemic prompted consumers to explore less-known regions, in search of variety and uniqueness. This scenario highlighted the need for adaptation and diversification within Portugal's wine industry as consumer preferences evolve in response to global challenges like the pandemic, something that this demarcated region has successfully achieved.

Also, the role of emotional communication became central, with regions like Bairrada focusing on messages of resilience and safety, while Beira Interior and Dão adopted narratives around authenticity, heritage, and escapism to rural environments.

**Table 2. Comparison of the main communication and distribution strategies among Bairrada, Beira Interior and Dão region.**

| <b>Bairrada region</b>                                                                                                                     | <b>Dão region</b>                                                                                                                                        | <b>Beira Interior region</b>                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Digitalisation:</b> The region strongly invested in its digital presence, using social media and online stores to promote wine.         | <b>Digital Channels:</b> The launch of virtual stores and increased presence on social media were predominant strategies.                                | <b>Wine Tourism and E-commerce:</b> There was a significant strengthening of wine tourism and digital commerce.              |
| <b>Resilience and Safety:</b> There was an effort to communicate a message of resilience and to position the region as a safe destination. | <b>Territorial Promotion:</b> The region was actively promoted, with emphasis on safe purchasing and the region's image.                                 | <b>Promotional Campaigns:</b> The region used promotional offers and online campaigns to attract consumers.                  |
| <b>Anti-Stress Campaigns:</b> The campaigns focused on wine to relieve stress during the pandemic.                                         | <b>Workshops and Presentations:</b> There were initiatives to engage consumers, such as workshops with wine producers and presentations on social media. | <b>Distribution and Take-Home:</b> The adaptation of distribution and the offering of take-home options were key strategies. |

Lastly, the resilience of these regions also stemmed from their capacity for innovation. Cerezo et al. (2023) emphasized the importance of creative flexibility during crises, noting that wineries that diversified communication and distribution were more effective in responding to consumer needs.

To better interpret the data obtained, the "Word Cloud" technique was used. Word clouds are images composed of words, where the size of each word represents its frequency in the analysed text. This technique allows for a quick and effective visualization of the most frequent words, facilitating the identification of patterns

and key themes. The steps for creating the word clouds included thematic coding of the responses, where the phrases identified in the questionnaire were assigned to each response. Subsequently, the coded words were input into a word cloud generator where customizable images were created. Word clouds provide an innovative and user-friendly approach for analyzing and presenting qualitative data, as the use of word clouds as dashboards offers an easy, quick, and meaningful analysis of qualitative data (Sellars *et al.*, 2018).



**Figure 1 - Word clouds (original, in Portuguese language) from Bairrada, Beira interior and Dão data analysis.**

The COVID-19 pandemic represented an unprecedented disruption, necessitating rapid strategic shifts across the wine sector. This study reveals significant regional disparities in how Bairrada, Beira Interior, and Dão adapted their communication, distribution, and tourism strategies. These findings reflect not only diverse levels of digital readiness but also varying degrees of strategic agility. From a digitalisation standpoint, Beira Interior demonstrated high adaptability, rapidly implementing e-commerce platforms and bilingual promotional content. Collaborations with digital influencers, such as sommelier António Lopes, exemplify the integration of influencer marketing into traditional wine branding. These efforts align with the principles of Marketing 5.0, where digital tools mimic human engagement to enhance the consumer journey (Kotler et al., 2021). The region's success underscores the relevance of digital maturity frameworks (Westerman et al., 2014), suggesting that early adopters of multi-channel strategies were more resilient during the crisis. Conversely, Bairrada, despite being a leading producer of sparkling wines, lagged in its digital response. While the region eventually updated its digital presence in 2023, the delay resulted in reduced visibility during critical phases of the pandemic. Nevertheless, its focus on physical consumer experiences and messages of resilience represent a more traditional approach to crisis communication. Emotional branding was present but conservative, leaning on legacy and regional trust.

Dão strategically embraced emotional storytelling and immersive online experiences. Its communication was deeply rooted in authenticity and regional identity, aligning with consumer desires for escapism and emotional

connection during times of uncertainty. Online workshops, storytelling campaigns, and virtual events signified a shift toward a more holistic form of engagement, demonstrating the growing relevance of co-created experiences in wine marketing. Wine tourism, traditionally reliant on physical presence, underwent a conceptual shift. Both Dão and Beira Interior capitalised on the pandemic-driven trend toward rural and nature-based experiences by promoting safe, tranquil, and meaningful interactions with their terroir. Through virtual tastings, guided vineyard walks, and digital storytelling, these regions exemplified the evolution toward 'phygital' (physical + digital) wine tourism. This transformation aligns with the broader trajectory of tourism innovation, where hybrid models ensure both accessibility and emotional depth (Pantano and Gandini, 2017). The integration of digitalisation into tourism and distribution strategies fostered new consumer habits, enabling regions to reach younger, digitally native audiences. Moreover, the implementation of logistical partnerships and custom delivery models by Beira Interior and Dão confirms the importance of distribution flexibility as a key factor for competitive advantage (Porter, 1985).

Beira Interior stood out as the most proactive, embracing digitalisation through multilingual content, virtual tastings, and partnerships with wine influencers. Dão leveraged authenticity and immersive experiences, highlighting the emotional dimension of wine consumption. Bairrada, while slower to adapt, maintained a focus on traditional values, underlining resilience and quality. The study identifies several strategic imperatives for wine regions navigating crisis contexts (Table 3).

**Table 3 – Main findings about strategies for wine regions during crisis contexts.**

|                              |                               |
|------------------------------|-------------------------------|
| Main findings from our study | Main findings from literature |
|------------------------------|-------------------------------|

|                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Digitalisation is non-negotiable<br>Regions that rapidly adopted comprehensive digital strategies were more successful in sustaining consumer engagement and expanding market access.   | Research shows that rapid adoption of digital tools—such as e-commerce, social commerce, and online communication—was essential for wineries to maintain visibility, engage consumers, and access new markets during crises (Curtis <i>et al.</i> , 2021). Another study analyses how social commerce and digital platforms supported sales and consumer engagement during crisis periods (Mastroberardino <i>et al.</i> , 2022).                                                                                                                                                                                             |
| Emotional Branding Enhances Impact<br>Campaigns that resonate on an emotional level, particularly through regional identity and storytelling, foster stronger consumer loyalty.         | This study highlights the importance of regional identity, experiential value, and narrative-driven branding. Emotional storytelling reinforces authenticity and strengthens consumer loyalty (Santos <i>et al.</i> , 2020).                                                                                                                                                                                                                                                                                                                                                                                                  |
| Distribution Agility Drives Resilience<br>Flexibility in distribution, including direct-to-consumer logistics and platform integration, is essential for adapting to disrupted markets. | Empirical evidence demonstrates that wineries capable of shifting quickly toward direct sales, online logistics, and flexible distribution channels were more resilient in disrupted markets (Mastroberardino <i>et al.</i> , 2022).                                                                                                                                                                                                                                                                                                                                                                                          |
| Tourism Innovation Sustains Growth<br>Phygital tourism experiences that blend digital access with authentic in-person engagement provide scalable and resilient business models.        | A systematic review of 116 peer reviewed articles and a subsequent meta-analysis of 88 empirical studies (total sample: n = 28,545) identified key internal and external factors shaping user experiences through interactions across virtual and physical tourism spaces (Zheng <i>et al.</i> , 2025). Another systematic post-COVID-19 review of technological innovation in wine tourism. The findings provide significant implications for researchers and policymakers, suggesting future research areas and offering insights on how public funds can support wine tourism's digital transformation and sustainability. |

Regarding the key findings, a common thread across all three regions was the investment in digitalisation. Each implemented or reinforced online platforms and strengthened their presence on social media. However, the pace and depth of this digital transition varied (Table 4) across the three wine regions. Additionally, a comparative overview of marketing campaigns could be presented, which would provide valuable insights into the effectiveness of different strategies and the best ways to measure success.

**Table 4 – Digital transition and marketing campaigns adopted by the regions during the pandemic.**

| Wine regions   | Digital transition overview                                                                                                                                                                                | Marketing campaigns overview                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Bairrada       | While eventually embracing digital tools, it was slower to adapt. Its online store was updated only in 2023, and the focus remained on traditional values such as product quality and regional resilience. | Highlighted safety, tradition, and sparkling wine excellence, supported by updated physical and virtual tasting spaces. |
| Beira Interior | It was the most agile, launching a virtual store as early as January 2021, and using bilingual content and collaborations with influencers to promote its wines.                                           | Used influencer marketing, anti-stress campaigns, bilingual content, and direct discounts.                              |
| Dão            | Leveraged its reputation and authenticity, emphasizing immersive virtual experiences and strong territorial branding.                                                                                      | Emphasised emotional storytelling, online workshops, and synergy with tourism boards.                                   |

The pandemic confirmed that investing in digital channels is essential, not optional. Regions that acted early and comprehensively,

particularly Beira Interior and Dão—were better positioned to retain and expand their markets.

A multinational study conducted in nine countries provides evidence that wine

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producers who invested in digital channels and direct-to-consumer (DTC) strategies performed better in response to the pandemic shock (Niklas et al., 2022). Similarly, Mastroberardino et al. (2022), report that the COVID-19 outbreak significantly accelerated digital transformation and online purchases in the wine sector. While some operators in the sector have merely undergone this change, others sought to benefit strategically from the shift.

A study conducted with 146 wineries in Portugal provides examples of wineries that quickly adopted e-commerce, virtual tastings, and other digital solutions to maintain sales and customer engagement (Curtis et al., 2021). Other findings highlight the wineries' impressive focus on creativity and flexibility while also bringing attention to cultural differences. The insights form a preliminary suggestion for best practice strategies that businesses within wine tourism may consider helpful in their future business planning (Szolnoki et al., 2022). More recently, a comparative study between the regions of 'Trás-os-Montes' and 'Dão' that examined performance on social media and regional digital strategies. The Dão Regional Wine Commission offers a more consistent and structured wine tourism portfolio, particularly through its website, where visits are promoted (including wineries and the Dão Wine Route) and bookings are possible (Fontes, 2024). In the same year, another study suggests that the wine sector shows a tendency toward concentration, with the emergence of producers with national scale and notoriety who, due to the greater dynamism of their activity, have sought international markets of great dimension and with purchasing power that value quality products (Costa, 2024).

According to the three respondents in our study, campaigns that connected with consumers on an emotional level, especially through authenticity and regional storytelling, proved more impactful than purely promotional strategies.

Using a real case study of a Portuguese winery, a study conducted by Woldarsky (2019) shows how storytelling (history, narrative, and values) activates consumer emotions, fosters emotional bonds, and potentially influences purchasing decisions. This directly supports the concept of the "power of emotional branding" in wine marketing. Another study analysed how online storytelling and regional narratives help build the identity of wine tourism destinations.

It is useful for understanding how emotionally-driven campaigns that highlight the region and its history can create differentiation and strengthen consumer engagement (Bonarou et al., 2019).

Experiential events and place branding help convey regional values and strengthen the emotional connection between the consumer and the location. It emphasizes that simply selling wine is not enough — it is essential to "sell" the story, identity, and overall experience (Cristófol et al., 2021). Aligned with this, another research empirically demonstrates that wine storytelling directly affects the wine tourist experience through sensorial engagement, perception of the landscape (winescape), excitement, and cultural immersion. It highlights the power of narratives as an integral part of the wine tourism offering (Santos et al., 2022).

From another perspective, the study conducted by Gómez-Rico et al. (2023), examines how different brand communication instruments (including brand image and online communication) influence consumer preference and the intention to visit wineries. It provides evidence that emotional and image-based communication has a measurable impact on consumer behavior.

Another recent study identifies determinants of brand love in wine tourism experiences. It demonstrates how well-designed wine experiences can generate emotional attachment to the brand, region, or winery, which translates into loyalty and word-of-mouth promotion (Dias et al., 2024).

From our study, flexibility in distribution, including e-commerce, home delivery, and logistics partnerships, emerged as a strong differentiator. This aligns with Porter's (1985) view that competitive advantage stems from strategic differentiation.

Rebocho et al. (2021) analysed the structure of wine distribution channels among producers in the Alentejo region, studying how vertical restrictions and transaction costs affect channel efficiency. The findings help explain how diversified or integrated channel strategies can reduce inefficiencies — relevant to agile distribution and strategic differentiation. Another study, though more oriented to supply-chain design, models how wine industry firms can reconfigure supply chain networks to optimize economic, environmental and social objectives. Their approach shows how redesigning distribution/logistics networks (i.e.



choosing suppliers, distribution facilities, transport, etc.) can create more resilient, efficient and sustainable distribution — which supports the idea that distribution agility is a competitive advantage (Fragoso et al., 2021).

Döring et al., 2024 in their work offers a typology of multichannel distribution strategies in the wine sector, showing that wineries are increasingly combining traditional retail, on-premise, DTC and online channels. The study confirms that multichannel / hybrid distribution — including online — is increasingly central to how the wine industry reaches consumers. Aligned with those strategies, a case study demonstrates that during COVID-19, the adoption of e-commerce (direct-to-consumer online sales) became a strategic asset for wineries. The shift from traditional B2B/offline channels toward B2C online channels significantly helped maintain sales, illustrating that digital distribution channels can be key for resilience in crises (Ribau et al., 2024).

Our results also indicate that integrating rural wine tourism and sustainable practices not only addressed immediate public health concerns but also positioned regions for future growth. These strategies support long-term resilience and align with evolving consumer values.

An interesting review article maps the state of academic research on the intersection of wine tourism and sustainability. It documents how tourism in wine regions has shifted from purely economic aims (sales and visits) toward broader concerns including environmental management, regional development, and sustainable practices supporting the idea that tourism diversification (through enotourism) can contribute to sustainable rural development in the long run (Montenella, 2017). A case study analyses how a rural wine cooperative in the Alentejo region (Portugal) adopted wine tourism as a deliberate diversification strategy. It shows how blending wine production with tourism, hospitality and sustainability-oriented practices provided new revenue streams, enhanced community involvement, and supported regional economic and social cohesion — illustrating a path for long-term regional resilience beyond viticulture alone (Almeida et al., 2023). With a different approach, an empirical study explores how tourists' perception of sustainability and responsible consumption influences their satisfaction and loyalty to wine tourism. The

results reveal that sustainability practices, environmental awareness and socially responsible winery behaviors strengthen emotional satisfaction and word-of-mouth intention — suggesting that sustainability is not only ethically desirable but also commercially beneficial in the long term (Dias et al., 2023).

A recent study examines how wine tourism in Galicia has evolved from simple winery visits to immersive, experiential, and sustainable tourism. It emphasises integration with circular economy practices, showing that sustainable tourism and renewable-energy-oriented activities significantly improve winery revenues, stimulate local economic growth, and support rural community viability, thus offering long-term value and resilience to rural wine regions (del Campo-Villares and Fuentes-Fernández, 2025).

Word clouds can be used to analyze any type of qualitative data (DePaolo and Wilkinson, 2014), summarizing textual content by representing word frequency through size (and sometimes colour) (Sellars et al., 2018). Clough and Sen (2008) also emphasize that word clouds provide a graphical and visual representation of the relationships within textual data (enabling reviewers to quickly identify patterns and key concepts to improve the quality of healthcare services and patient outcomes (DePaolo and Wilkinson, 2014). Figure 1 presents the three-word clouds obtained from the original answers provided by the three respondents from the Bairrada, Beira Interior, and Dão regions. To respect the original data and preserve the full meaning of the terms, the word clouds are intentionally presented here in Portuguese, with some words in English as originally reported by the interviewers.

From the comparative content analysis of the three word clouds presented in Figure 1, words such as 'digital', 'online', and 'canal' were more prominent in the Bairrada results; terms like 'venda', 'e-commerce', and 'canal' stood out in the Beira Interior results; and 'loja', 'rede', and 'region' were more relevant in the Dão results. As expected, the word 'vinho' appeared several times in all three interviews, as it was the main topic.

This research is not without limitations and the interpretation of the results, and their managerial and policy implications should be taken with caution. This is due to the sampling method, because a convenience sample was used. Furthermore, this study's results are illustrative of the impact of the COVID-19 in

three wine regions, from the point of view of three actors, not acknowledging the full-scale effect of the pandemic. Despite these limitations, the fact that, to the best of the authors' knowledge, there has been no study that investigates and compares the strategies adopted by Bairrada, Beira Interior and Dão wine regions, during COVID-19 pandemic concerning to digitalization, distribution, and wine tourism experiences, this research presents a valuable insight that calls for further research.

Results and Discussions are recommended to be presented as a single section. Be clear and easy to understand but complete and concise in stating and discussing

### CONCLUSIONS

This study examined how the wine-producing regions of Bairrada, Beira Interior, and Dão responded to the challenges posed by the COVID-19 pandemic, with a particular focus on communication and distribution strategies. Despite facing similar external pressures, each region adopted distinct approaches aligned with its specific characteristics and strategic priorities. In other words, these three key Portuguese wine regions demonstrated differentiated approaches in their adaptation, shaped by their pre-existing structures, strategic visions, and digital maturity.

In terms of wine tourism, Beira Interior and Dão capitalised on the pandemic-driven shift in consumer preference toward rural and nature-based experiences. They promoted safe, tranquil visits through storytelling and digital engagement, while Bairrada's tourism efforts were more conservative, focusing on local physical spaces and traditional virtual tastings. All regions adopted e-commerce and delivery strategies, but again, with varied outcomes. Beira Interior and Dão were proactive in establishing logistical partnerships and custom delivery models. Bairrada's approach was more static, relying heavily on physical store expansion.

In conclusion, the resilience and adaptability demonstrated by Bairrada, Beira Interior, and Dão underscore the vital role of innovation, digital transformation, and consumer-centric strategies in navigating crisis scenarios. The lessons drawn from their experiences during the COVID-19 pandemic offer valuable guidance for strengthening the Portuguese wine sector against future disruptions.

the findings, comparing results with previous works and proposing explanation for the result obtained. All the data of this section must be accompanied by appropriate statistical analyses. All figures and Tables should be cited in the text as Figure 1, Table 1 etc. where they are referenced first. The tables be supplied as editable files, not pasted as images. The legend should be concise but comprehensive. Tables should not duplicate the data/information presented in figures. All abbreviations from the Table must be defined in footnotes. Figures must be of high resolution. Numbers and symbols incorporated in the figure must be large and visible enough to be legible after reducing the figure size.

The lessons drawn from this study are relevant not only for the Portuguese wine sector but also for other agri-food and tourism-dependent industries seeking to future-proof their strategies. Innovation, digital integration, and consumer-centric communication remain central pillars for navigating both current and future disruptions.

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