

# The Internet as an Important Tool in Developing the Dao Wine Route Network: A Study of the Dao Wine Route Websites

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**Abstract** — Wine routes are an integral part of wine tourism because they aid in promoting wine and grape producers of a certain region. Despite acting as a lever for the local and regional development, they face numerous obstacles that hamper their competitiveness as a tourist product. In this paper, we analyze the use of Information and Communication Technologies (ICT), namely websites, as an essential tool for the development and enhancement of the Dao Wine Route, which consists of 35 members. We examined the presence of these members on the Internet and the quality of their websites using various indicators (information provided, speed, strategic alliances, languages available, etc.). The results demonstrate that few members use websites as a means to promote their services, compromising the whole network. The information obtained is a starting point for the implementation of strategies to make the Dao Wine Route more competitive so that it may accomplish its main function: to contribute to local and regional development.

**Index Terms** — Regional development, Websites, Wine routes, Wine tourism

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## 1 INTRODUCTION

Wine Tourism is one of the most recent forms of Tourism. It is defined by Hall *et al.* [1: 6] as “*visitation to vineyards, wineries, wine festivals and wine shows for which grape wine tasting and/or experiencing the attributes of a grape wine region are the prime motivating factors for visitors*”.

The majority of wine tourism destinations is rural and usually includes cities and villages with low population density. Different types of wine tourism can be developed at these locations: wine routes; wine-producing Villages; tours of the vineyards, agri-tourism estates and to wineries and cellars; wine information centres; wine and winery museums; wine events and festivals; cruises or helicopter trips; wine-related spas; among others. These types of wine tourism also include a variety of other activities such as: wine tasting, observing and/or participating in the wine production and bottling stage; purchasing wine and other wine-related products, etc. [2]. It is in this context that the national wine heritage and the production of

quality wines produced in certain regions have become essential elements of “wine tourism”. Associated with environmental, cultural and gastronomic aspects, wine tourism may be considered an entertainment factor that shows the diversity of the national tourism supply [3].

Portugal is a rich country in wine regions and has strong traditions of wine consumption, making wine an important sector in the national economy [4]. Most of these regions are found in the interior part of the country, where certain wine producers have organised themselves and created 11 wine routes, which are the most visible forms of wine tourism in Portugal. Wine routes are an integral part of wine tourism because they aid in promoting wine and grape producers of a certain wine region, acting as a lever for local and regional development.

The Internet is one form of disseminating wine routes. It is a powerful communication and distribution tool. Whether it is used for leisure, culture, information or as a work tool, nowadays the Internet has become almost indispensable. ICT (Information and Communication Technologies) and Tourism are two of the most active motivators of the emerging global economy, providing strategic opportunities and powerful tools for economic growth [5].

This study aims to analyse the level of development and the use of ICT, namely through an evaluation of the websites of the

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35 members of the Dao Wine Route (DWR), by applying a content analysis. Researchers have long stressed the importance of assessing websites effectiveness [6]. In the particular context of wine tourism, this evaluation is important given that the wine producer's website may be the first contact a potential customer may have with the producer [7]. We propose some strategies to make the DWR more competitive, contributing to the development of the regions involved.

The remainder of this paper is organized as follows. Section 2 provides a literature review of ICT in Tourism. Section 3 examines the DWR's characteristics and legal frame. Section 4 presents the research methodology used. The remaining sections present the results of our analysis and conclusions.

## 2 INFORMATION AND COMMUNICATION TECHNOLOGIES IN TOURISM

Information technologies contribute to the ability of organisations to organize their resources, increase their productivity, communicate their policies and offers, as well as contribute to the development of partnerships with all its stakeholders [5].

The development of information technology has undeniably changed the tourism industry [8]. They are changing the way tourism enterprises do business. Reservation and information management systems, such as computerised reservation systems, the electronic point of sale in the hospitality sector, the way companies communicate, how customers search for information and purchase travel services, are becoming more common on the internet [9].

According to Reinders and Baker [10] tourism industries are at the forefront of users of new communications technology. Tourism is a consumer of different types of information and has its support in the development of multimedia, information systems of communications and technologies.

On the demand side of tourism, the young, sophisticated, knowledgeable and investigator tourist has become familiarised with the emergence of information technologies and requires flexibility, expertise, accessibility, interactive products and communication as fundamental principles [11].

Overtime, many researchers have attempted to understand the impact of ICT on travel and tourism industry. Poon [12] examined some of the major challenges facing the tourism industry and outlined how ICT have helped address these issues over the last few decades. Sheldon [13] and Inkpen

[14] provided a detailed and clear understanding of the main applications of ICT in different travel and tourism sectors. Werthner and Klein [15] and Buhalis [16] took an in-depth look at the strategic implications of ICT in tourism. O'Connor [17] and Buhalis and Laws [18] focused on the crucial issue of distribution channels within the tourism industry.

Empirical research on Internet use in the wine industry is scarce and most of the studies that do exist focus on vineyards in New Zealand, Australia, Germany, and the United States [19]. For example, Nowak and Newton [7] conducted a study in the USA and found that positive evaluations of the winery's website lead to increased trust in the winery. Stevens and Burns [20] focused on wineries from a wine region in New Zealand website usage and found that although the websites were generally easy to navigate, they failed to present clear pictures of their products (bottles of wine) and did not clearly identify the brand.

Raw et al. [6] consider website evaluation an emerging research area. These authors found 37 publications, between 1996 and 2009, on hospitality website evaluation. A variety of approaches have been used for website evaluation in the tourism and hospitality industry [20]. One of the approaches used by researchers has been the content analysis methodology [20].

In spite of the growing interest in website evaluation in this industry, there is a lack of research in the particular context of wine tourism.

## 3 THE DAO WINE ROUTE

In Portugal, there does not exist a legal document which defines wine routes, however, we can find this definition in a law project of wine routes in Portugal, from March of 2001 [21]: "...a route is made up of a group of locations, organized in a network, properly marked, within a wine producing region of quality, that can raise an effective tourism interest, including destinations whose supply includes certified wines, centers of interest in wine, museums and tourism developments".

The routes should be preferred instruments of organization and dissemination of wine tourism and should be the driving force of the potential that the wine regions have, thus contributing to the development of the Demarcated Region and to the improvement of living conditions of the rural population.

The DWR was established on the 20<sup>th</sup> of September of 1995 by protocol [223] signed

between the Ministry of Tourism, the Dao Wine Regional Commission, the Coordinating Commission of the Centre Region, the Dao Lafoes Tourism Region, the Vitidao – Wine Producers Association of the Dao Demarcated region, the Vinidao – Wine Producer Bottlers Association of the Dao Demarcated Region, the Dao Wine Connoisseurs Association, UDACA - *União das Adegas Cooperativas do Dão (Union of Dao Cooperative Wineries)*, *Anceve - Associação do Norte dos Comerciantes Exportadores de Vinhos e Bebidas Espirituosas* (Wine and Spirits Exporters Association of the North) and *Acibev - Associação dos Comerciantes e Industriais de Bebidas Espirituosas e Vinhos* (Merchants and Industries Association of Spirits and Wines).

Article 1, paragraph 1 of the *Regulamento Interno da Rota do Vinho do Dão* (The Dao Wine Rules of Procedure) [234] states as an objective ... *to stimulate the development of the Dao Demarcated Region tourism potential in the diverse aspects of wine culture and the production of quality wines*. Paragraph 2 of the same article states ... *“the Dao Wine Route should integrate a group of places within the Dao Demarcated Region, related to vineyards and wine, organized in a network and properly marked, which may foster a recognized interest on behalf of the tourist, through a carefully selected and characterized offer*. Paragraph 4 concludes with ... *all the elements that can enhance the Route should also be included, such as: Cultural tourism, Crafts, Folklore, landscape, monuments, ethnography and cuisine*.

The DWR has 3 wine trails (Itinerary 1 – *Granite Paths*, Itinerary 2 - *Between the Vouga River and Pavia River* and Itinerary 3 – *Between the Dao River and the Mondego River*). In addition to promoting the wine, these trails make natural landscapes, the beauty of estates, the rich historical, architectural and cultural heritage and the quality of the gastronomy known.

The DWR was inaugurated in 1998, initially with 17 members, but nowadays has 35 diverse members (wine producer bottlers associations, wine-maker associations, cooperative wineries unions, cooperative wineries, wholesalers, wine libraries, wine producing estates, rural tourism businesses, restaurants and other wine-related facilities), whose names and websites are found in table 1.

As can be seen in table 1, 10 (29%) DWR members do not even have a website. On the other hand, 6 (17%) members have a website,

but the page is not available or redirects to another site and 2 (6%) members have the website under construction. Therefore, only 17 members have active websites, which represents approximately only 49% of the total members. It is to be noted that these sites opened in less than 5 seconds using the *Firefox* browser.

TABLE 1  
DAO WINE ROUTE MEMBERS

Dao Wine Route Members	Website
Adega Cooperativa de Mangualde, CRL	<a href="http://www.acmang.com">www.acmang.com</a>
Adega Cooperativa de Nogueira do Cravo	Non-existent
Adega Cooperativa de Penalva do Castelo	<a href="http://www.adeqapenalva.com">www.adeqapenalva.com</a>
Adega Cooperativa de Tondela, CRL	Non-existent
Adega Cooperativa de Vila Nova de Tázem	<a href="http://www.adeqacoop-vrtazem.com">www.adeqacoop-vrtazem.com</a> *
Casa Cardoso de Menezes, Lda	<a href="http://www.murqueira.com">www.murqueira.com</a> *
Casa da Insua	<a href="http://www.casadainsua.pt">www.casadainsua.pt</a>
Casa da Passarela	<a href="http://www.ca3riqodapassarela.pt/">www.ca3riqodapassarela.pt/</a>
Casa da Peneirada	Non-existent
Casa Grande de Loureiro	<a href="http://casagrandeloureiro.planetaclix.pt">casagrandeloureiro.planetaclix.pt</a>
Cooperativa Agrícola de Nelas	<a href="http://www.coop-nelas.com">www.coop-nelas.com</a>
D'Aguiar-Companhia Agrícola, SA	<a href="http://www.daguiar.pt">www.daguiar.pt</a> ***
Quinta da Alameda	<a href="http://www.quintadaalameda.pt">www.quintadaalameda.pt</a> *
Quinta da Bica	<a href="http://www.quintadabica.com">www.quintadabica.com</a>
Quinta da Boavista	<a href="http://www.quintadaboavista.eu">www.quintadaboavista.eu</a>
Quinta da Espinhosa	Non-existent
Quinta da Tabuada	<a href="http://www.quintadatabuada.com">www.quintadatabuada.com</a> *
Quinta da Turquide	Non-existent
Quinta de Cabriz	<a href="http://www.daosul.com">www.daosul.com</a>
Quinta de Sães/Quinta da Pelhada	<a href="http://www.eplanet.com.pt/quinta_pelhada">www.eplanet.com.pt/quinta_pelhada</a>
Quinta de Santo António de Serrado	<a href="http://www.baraodenelas.com">www.baraodenelas.com</a>
Quinta do Cerrado	<a href="http://www.quintadocerrado.com">www.quintadocerrado.com</a>
Quinta do Espanadal	Non-existent
Quinta do Gestal	Non-existent
Quinta do Loureiro	Non-existent
Quinta do Penedo dos Mouros	Non-existent
Quinta do Perdigão	<a href="http://www.quintadoperdigao.com">www.quintadoperdigao.com</a> **
Quinta dos Carvalhais	<a href="http://www.quintadocarvalhais.eu">www.quintadocarvalhais.eu</a>
Quinta dos Merouços	Non-existent
Quinta dos Roques	<a href="http://www.quintarques.pt">www.quintarques.pt</a>
Sociedade Agrícola Boas Quintas LDA	<a href="http://www.boasquintas.com">www.boasquintas.com</a>
Sociedade Agrícola Castro Pena Alba LDA	<a href="http://www.quinta-do-serrado.com">www.quinta-do-serrado.com</a> **
Sociedade Agrícola de Santar, S.A.	<a href="http://www.santar-sa.pt">www.santar-sa.pt</a> *
Sociedade Agro-Pecuária da Quinta do Darei, Lda.	<a href="http://www.casadedarei.pt">www.casadedarei.pt</a>
UDACA	<a href="http://www.udaca.pt">www.udaca.pt</a>

Source: Own elaboration

\* Although the company has a website, the page is not available

\*\* Websites under construction. They only provide contact information (telephone numbers, email and address).

\*\*\* The website redirects to the *Hospedaria do Convento* (Manor House)

In the age of new technologies it is essential that all members should have their own website. Furthermore, information concerning wine tourism destinations should not only be found on city hall websites, but also on the members' websites which unfortunately does not always happen today.

#### 4 METHODOLOGY

The methodology conducted in this study began with a literature review related on the one hand to wine tourism in order to understand how crucial this new tourism product is for regional development and on the other hand to the importance of new

technologies on the promotion and dissemination of products and services, in general and specifically for tourism products.

We then conducted a content analysis of 17 members' active websites in order to put forward some recommendations to enhance the wine route. This analysis was conducted during the months of March and April of 2010 and based on indicators that will be described in the following section.

## 5 EVALUATION OF DWR MEMBER'S WEBSITES

The main aim of this analysis was to evaluate the current state of the DWR members' websites, without comparing them in order to draw some conclusions on how to enhance the route.

Note that the Dao Regional Wine Commission is the entity responsible for the enhancement and dissemination of the DWR, however, the route is not even mentioned on their website.

Viniportugal ([www.viniportugal.pt](http://www.viniportugal.pt)), Vinitur ([www.vinitur.com](http://www.vinitur.com)) and Infovini ([www.infovini.com](http://www.infovini.com)) were some of the websites that had information on the various Portuguese wine routes, including the DWR, with the members' contacts and a Route map.

The following are aspects that were considered important and that should be available on the websites: the member's participation in the route; possibility of visiting facilities; availability of the website in other languages; contact information, company's history, products sold, newsletter, wine-selling and storage information, awards won, videos and pictures; social networks and the existence of links to other members' websites. These items are found in figure 1 and will be analysed in detail below.

### 5.1 DWR and tours to facilities mentioned on website

Only 4 (24%) out of the 17 active websites indicated that they were a participating member of the DWR. However, the few that did mention the route did not make this a prominent feature of the site. Furthermore, these websites did not include a map of the DWR, nor a link to the Dão Regional Wine Commission website (entity responsible for the Management of the Route). This clearly shows the inexistence of planned strategies to promote the DWR.

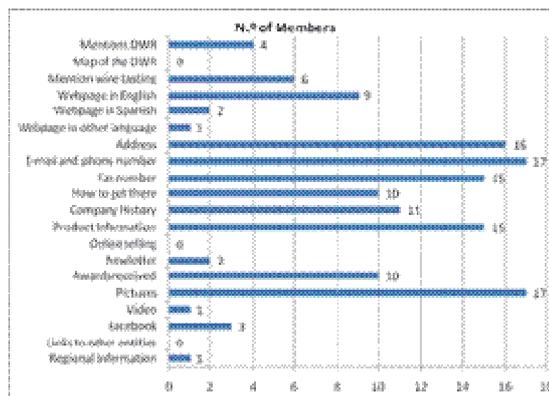


Fig. 1. Number of Members that provide certain information on their Web page

In relation to the tours to the facilities, only 6 (35%) members refer to the possibility of visiting their facilities and tasting wine. Although it is possible to visit all the members, we consider that these tours should be more promoted, with greater emphasis on the website. In fact, only 3 out of these 6 members have a separate webpage with tours. This page includes more detailed information about the visit, namely which regional products will be served with the wine tasting. And only 1 member mentions the possibility of the visit being available in another language.

Lastly, only 2 (12%) members indicate information regarding the opening and closing hours.

### 5.2 Websites in other languages

Offering websites in other languages broadens the national market to the international one. Therefore it was important to identify which members' websites are available in other languages.

Only 9 (47%) members with active websites presented their contents in English. Nevertheless, there were 4 (24%) other members that presented a button to the English language, but in fact this was not available after clicking on it. One of the members also had buttons for Spanish, German and French, but these were also unavailable. In Everard and Galleta's study [24] they found that users' had negative perceptions of website quality when they found incomplete links. Lastly, one of the members website mentioned that it would soon be available in English.

In addition to providing the website in English, 2 (12%) members also presented their contents in Spanish. One of the members also had its contents in German, Mandarin and Russian, as these were important export markets of their wine. To

sum up some members also provided their websites in English, Spanish, German, Mandarin and Russian, but in a low percentage.

This low percentage of sites in English or in 2 or more languages can be explained by the high costs a small company would have to provide its website in other languages or by the fact that companies consider that their target group is Portuguese.

Having their websites available in other languages is essential to members, as the Internet has a global range, not just a local one.

The findings in THR's study [25] show that the European countries with higher number of tourists travelling motivated by Gastronomy and Wine are France, Holland, United Kingdom, Italy and Germany. Thus, we advise members to bet on these languages so they can attract these visitors to Portugal and, in particular, to the Dão Region. Moreover, members should provide their websites in Spanish, an attractive market due to its proximity to Portugal.

### 5.3 Location and Members' Contacts

In order to reinforce relationships between customers and members, members need to provide their potential customers with necessary information about their businesses: telephone contacts, addresses, e-mail and how to get there.

All members provided a telephone contact and most provided an address and fax number. Surprisingly, one member did not provide either an address or a fax number. Nevertheless, all the members did include an email address, which is a more convenient form for the customer to contact the company as well as a more economical one.

As for information concerning the member's location, 7 (41%) did not provide this, while 10 (59%) did provide maps and/or GPS coordinates.

### 5.4 Company's History

We found that 11 (65%) of the members provided information about the companies' history, namely the year of start-up and, in most of the cases, information about the company's founders, current owners and the companies evolution was provided.

### 5.5 Commercialized Products

Websites can be a useful tool for a company to promote its products and services, by providing detailed information on products

they sell. They also provide customers the opportunity to buy products online.

We found that most of the members (15) that had active websites provided diversified information about the company's products, namely alcohol content, balance and acidity. In addition to this information, some members suggested the correct temperature to serve the wine and appropriate food to accompany the wine.

It is not possible to buy products on any of the members' websites. Bernet and Stricker [26] consider that although customers can not taste the wine, it is an adequate product to be sold online because differentiation product is high and also because detailed information on the product can be provided on the website. Even though a member has a link to its online store on its website, customers can only find product information and not prices but have the possibility to ask for further information on the product. While none of the members sell wine online, we found some websites that sold DWR members' wines, such as *Portuguese Wines Shops* ([www.portuguese-wines.com](http://www.portuguese-wines.com)) and *Garrafeira Nacional* ([www.garrafeiranacional.com](http://www.garrafeiranacional.com)).

We consider that wine selling online is an opportunity for members to promote their wines and the possibly to create synergy with other products that they sell or with other companies in the region.

### 5.6 Newsletters

One of the main advantages of newsletters is that a company can reach a broad audience with very little costs, promoting business and providing updated information to potential and interested individuals that sign up for it. Only 2 (12%) members give the user the possibility to sign up for newsletters, which we consider to be very few. Members should use this tool as a marketing tool to disseminate their services and activities, to capture customers' loyalty and obtain a reliable and useful client database.

### 5.7 Wine production and Storage Information

We found that 10 (59%) members provide information about wine production and 11 (65%) supply information about their wine storage conditions. This information is important for wine tourists, as is confirmed in Charters and Ali-Knight's study [27]. These authors concluded that wine tourists found it was important to gather information on how

wine is produced, about its aging and how it is stored.

### 5.8 Awards Received and Press Releases

Ten (59%) members' websites mention awards attributed to their wine, but only a few do so more prominently than others. In fact, only half of these members have a separate webpage for the awards received, while others only mention this fact in the company's presentation or near the wines produced.

In our opinion, more prominence should be given to these awards. Although many members have received awards, these are not mentioned or do not stand out sufficiently. According to Gomes *et al.* [28], Wine Lovers<sup>1</sup> look for novelty products and awarded products. The DWR would be a place they would visit if they knew, for example, that one of the members wine produced in 2004 appeared on the cover of Wine Spectator (October 15<sup>th</sup>, 2008), one of the most respected magazines and major reference in the wine world.

Moreover only 3 (18%) members have a specific place on their websites to put press releases about their wines. We consider that this is a credible way to promote the member's products.

### 5.9 Pictures and Videos

Although all websites provide pictures, many of the members only have pictures of their wines. However, other members also provide pictures of their vineyards, storage rooms, wineries, and of the region where they are located.

Regarding videos, only one member had a *Youtube* video on its website. This video clip was taken from a Portuguese television programme about wine called *Hora de Baco* (Baco's Hour) from the RTP Portuguese television channel. This programme was about wines with a story about this DWR member.

We believe that all members should invest more in new technologies, providing, for example, virtual tours or 360° photographs as a way of attracting people to visit their facilities.

### 5.10 Ethical Issues

We found that in order to enter 2 members' websites, the user must have the minimum legal drinking age. Before entering one of

these websites, the users are asked to put their birth date. If they are under 18, they will not be able to access the website. On this member's website, there is also a public service message "Drink with Moderation".

### 5.11 Social Networks

Social Networks are another recent phenomena that have had a rapid growth. In the past 10 years, millions of worldwide Internet users have visited social networks, benefiting from their free services [29]. Facebook is one of the largest social networks in the world and could be an opportunity for members to create a relationship with millions of individuals interested in wine all over the world. We found that 3 (18%) members had a Facebook page, although only one mentions it on his homepage. On these Facebook pages we found text messages, photos and press releases related to the member. Some national and international clients left messages praising the members wine and the experiences lived at their facilities when they visited them. The opportunity to leave opinions is a powerful means to share experiences with other people interested in wine.

Another way that members can promote their company is by using viral marketing techniques throughout their websites. Sweeny [30] suggests placing a "Share this Information with a friend" or "Tell a friend about this product" button on the website to enable users to spread information rapidly and effectively. Another possibility for members could be placing a "Share this article with a friend" button under press releases about the member. Unfortunately, we found that none of the members used this simple, but effective, marketing technique.

### 5.12 Links to other members' websites, other entities and information about the region

None of the members had links to other members' websites, or to other entities related to wine. We also found that only one member had information about the region, and about local festivals and events.

The existence of links to other organizations reinforces the company's integrity and makes the customer believe that the company has reliable and competent business practices.

As mentioned earlier, a wine route *is made up of a group of locations, organized in a network*. However, reality shows that many times the route is concentrated only on the

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<sup>1</sup> Gomes *et al.* define 3 profiles for Wine Tourists: 1) *Wine Lover*; 2) *Interested*; 3) *Occasional*

wine producing companies, which compromises the touristic route development. Therefore, other types of members should be integrated in the route, even if they are not directly related to the wine theme. This would help to reveal particular aspects of culture, history, tradition, heritage and landscape. Thus, cooperation between accommodation, restaurants, transport, intermediaries, tour operators, providers and local businesses should be a priority. Also important is the connection with public institutions (local, central and regional administration).

## 6 CONCLUSION

The development of a sustainable strategy of the Wine and Gastronomy Product implies the consciousness of all the entities involved, whether they are estates, wineries, accommodations, restaurants, cultural and/or sports associations or public sector entities. Furthermore, it implies the cooperation and interaction between private and public initiatives.

This is the only way that wine tourism will stop being a mere form of Tourism associated with gastronomy and wine and will be a better way to promote the region, culture, traditions, and environment, improving the local population's living conditions and developing the demarcated regions by internationalizing them.

Portugal has all the necessary essential resources and conditions to develop this type of tourism product and wine routes can be the main instrument of this dissemination. In addition to these routes being an organized network of members, they should also concern themselves with promoting a large variety of complimentary offer, whether through the organization of large events or of smaller entertaining events, such as wine courses, regional cuisine classes or wine tasting events. They may also contribute greatly to reducing seasonality and to changing the flow of tourism offer to areas that have fewer numbers of tourists.

We believe that the DWR members' websites play an important role in promoting wine tourism, given that they can contribute to achieving one of the objectives of the Dao Wine Route Protocol [13]. The wine routes promote and disseminate Dao wines and wine-producing regions by attracting tourists to the region. These tourists will use the accommodations of the region, eat at local restaurants, buy craftwork, visit monuments, museums and other locations, learn old traditions and buy Dao wine.

However, this study has revealed that almost half of the members do not have websites and those that do, could further develop and improve them. In fact, the members that have websites may have limited possibilities in successfully competing in this sector due to the lack of information and interactivity provided on their websites. The results of this study can contribute to a better development of Portuguese wine routes and therefore help promote entrepreneurs as well as the regions where they can be found

First impressions are crucial and therefore, members should bet in developing and maintaining attractive, updated and user-friendly websites.

Our findings are expected to benefit wine tourism practitioners and researchers, by providing useful information with which they can build well-constructed and effective websites.

It would be worthwhile for future research to analyze and compare more developed international wine route websites with the Portuguese ones and to add more indicators.

## ACKNOWLEDGMENT

The authors wish to thank Paula Fonseca for her help in reviewing the final version of this paper.

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