

Online popularity as a development factor of cooperatives in the winegrowing sector

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Abstract

Spain is a global leader in the wine sector in terms of production capacity, which is in stark contrast to its low domestic wine consumption. This situation forces Spanish producers to develop a clear focus on exports. Traditionally, the business model in Spain has been based on low prices, high volumes, and a strong dependence on traditional markets, which places Spain at a clear competitive disadvantage in terms of value. Given these commercial challenges in this sector, where cooperatives play a central role, information and communication technologies, particularly websites, offer a source of competitive advantage. The main aim of this research is to analyze the organizational factors and commercial features that are associated with the online popularity of wine producers. This study seeks to verify the influence of organizational aspects (company size and integration), commercial features (sales of bottled wine, internationalization, and organic certification), and website quality on the popularity of corporate websites. The analysis was conducted using the method of fuzzy-set qualitative comparative analysis (fsQCA). The results reveal that the number of website visits is positively related to business integration, organic certification, export activity, website quality, and the marketing of bottled wine.

Keywords: winegrowing sector, cooperatives, websites, organic agriculture, fuzzy-set qualitative comparative analysis (fsQCA)

1. Introduction

Spain plays a leading role in wine production worldwide (International Organisation of Vine and Wine, OIV, 2018). According to the figures for wine production, Spain is the third largest producer worldwide, with a production of 32.1 million hectoliters in 2017. However, this high production is in contrast to domestic wine consumption, where the Spanish market is only the seventh biggest worldwide (OIV, 2018). This disparity between domestic wine production and consumption in Spain forces Spanish producers to adopt a clear orientation toward foreign markets.

Accordingly, Spain has become the world leader in terms of export volume in recent years, exporting more than 235,000 hectoliters in 2017. However, Spain has the third biggest turnover, with a value of wine exports of 3 billion euros. This situation reflects the traditional business model, which is based on low prices, high volume, and a strong dependence on traditional markets. This model has placed Spanish producers that operate in foreign markets at a clear competitive disadvantage in terms of value (Cervera & Compés, 2018).

The central role of cooperatives in the Spanish wine sector must be noted. According to *Cooperativas Agro-alimentarias* (2011), agricultural cooperatives produce 60% of the wine in Spain but bottle, in general terms, less than 5% of their production. Cooperatives account for more than 40% of vineyards, covering 58% of the wine-producing area.

The cooperative model is an important and innovative social and economic model that can address the challenges of globalization as well as situations of uncertainty and recession. Therefore, cooperatives need to modernize and keep pace with the notable developments that have taken place in the Spanish wine industry and that have improved the competitiveness of its products (Vázquez, Chivite, & Salinas, 2019). Meanwhile, cooperatives must also grow in order to improve their competitiveness (Juliá, 1993; Mozas, 1999).

In response to these commercial problems, information and communication technologies (ICTs), particularly the tools provided by the Internet, offer a source of competitive advantage for the sector by providing access to alternative sales channels capable of helping overcome the commercial shortcomings that agri-food products, particularly organic products, have traditionally faced (Fernández-Uclés, Bernal-Jurado, Mozas-Moral, & Medina-Viruel, 2019). The Internet has undoubtedly become crucial in business and trade around the world because of its rapid widespread penetration in society. Websites represent one of the fundamental tools in online business strategies. Websites are the channel through which communication between companies and their customers takes place and where information about companies' offerings is displayed (Fernández-Uclés et al., 2019). Through its website, a company can engage in public relations, sales promotion, and relationship marketing initiatives (Louw & Nieuwenhuizen, 2019).

Given this context, the main aim of this research is to analyze the organizational factors and commercial features that are linked to the popularity of wine producers' websites. Specifically, the aim is to verify the influence of different aspects of the business on these companies' website traffic. These aspects are organizational and structural features (company size and integration), commercial features (the marketing of bottled wine to end consumers, internationalization, and organic certification), and website quality.

To pursue this aim, this study is structured as follows. Following this introduction, the theoretical framework is described, and the research propositions are formulated. Next, the population under study and the method used to conduct the analysis are detailed. The results of the study are then presented and contrasted with those reported in other related studies. Finally, the conclusions are presented, together with the limitations of the study and future lines of research.

2. Theoretical framework

Technological development is a key consideration in an organization's general strategy and in business management. Organizations must be aware of the digital transformation of society and its impact on business. The literature shows that agri-food cooperatives, unlike other types of organizations, lag behind in implementing ICTs (Vázquez et al., 2019). This technological challenge must be addressed and must be considered a key competitive factor in today's context. In this context, corporate websites are key tools that provide a valuable online platform to build and strengthen relationships with consumers (Laroche, Habibi, & Richard, 2013).

The number of visits to a corporate website determines the online popularity of an organization, helping the organization increase its visibility and therefore its sales (Carlin, 2017). Receiving a visit is a critical opportunity for companies, which must put all their efforts into capturing customers' attention, securing customers' commitment, and inducing customers to act (Demangeot & Broderick, 2016). Web traffic is therefore a key variable for an organization to be aware of and measure so that the organization can determine effective strategies to maintain and enhance its online presence while improving its organizational performance (Ghandour, 2015). Accordingly, this study proposes to identify the variables that are positively associated with the number of visits to an organization's website.

Website quality can be defined using different approaches, and it constitutes a competitive advantage for organizations in their commercial activity (Perçin, 2019). A high-quality website is valued positively by users, increasing its visibility and improving commercial relations with consumers (Bernal, Mozas, Fernández, Medina, & Puentes, 2019). A more developed website not only leads users to stay on the website for longer but also encourages them to return (Jones & Kim, 2010). These factors are linked to user loyalty, which is highly relevant in consumer purchase intentions (Kabadayi & Gupta, 2005).

For some users, websites are the first and only contact they have with an organization, so a high-quality website is a good motivation to visit and recommend it (Loureiro, 2015). The impression that corporate websites make on users depends on the information they provide and their quality, connectivity, and interactivity, which are useful for strengthening the relationship with consumers and increasing the popularity of the website (Chiu, Hsieh, & Kao, 2005). A more developed website in terms of visual appeal, information, and interactivity with other social networks leads to more traffic and better online brand performance (Ye, Barreda, Okumus, & Nusair, 2019). Based on this line of argument, the following proposition may be formulated:

Proposition 1: A higher quality website will attract more visits and will therefore tend to increase its popularity.

In the Internet age, national boundaries have become blurred. Corporate websites have a global reach, so any user anywhere in the world can access them. A high-quality website linked to social networks and presented in different languages is a cheap way of internationalizing and reaching out to a large number of foreign users (Manyika & Lund, 2016). These virtual platforms also give exporting companies numerous functionalities, so they will tend to improve their quality and thereby attract a greater number of users (Kim, 2019). In addition, websites allow small organizations to grow through exports (Qurratu’Aini and Hapsari, 2019), which entails major marketing efforts through their websites to increase their online popularity. Thus, websites have become a channel for SMEs to internationalize so as to achieve a high volume of website traffic (Manyika & Lund, 2016). Based on these arguments, the following proposition may be formulated:

Proposition 2: Organizations that internationalize are associated with more popular websites.

The organic product market has experienced steady growth, so more and more organizations are tending toward organic production. However, on the demand side, consumer misinformation and poor access to the supply of organic products have led consumers to use online channels as an alternative means of purchase (Mozas, Bernal, Fernández, & Medina, 2016). This situation is especially relevant given that consumers of organic products need more information (Lee & Yun, 2015) and that traditional sales channels have been unable to respond to this growing need (Roitner, Darnhofer, Somsook, & Vogl, 2008). As a result, users in this segment are attracted to the websites of organizations whose information and communication power can respond to their greater thirst for information (Bernal et al., 2019). Based on these arguments, the following proposition may be formulated:

Proposition 3: The supply of organic products through a website is conducive to the website's popularity.

Many researchers have cited integration as a way of strengthening cooperatives and ensuring their survival (Bel, 1996; Carrasco & Garrido, 1991; Juliá, 1993; Mozas, 1999; Vargas, 1995). Cooperatives are built on collaborative arrangements that bring together many individual business owners. This group shares the means of production to exploit the benefits of collaboration and a larger size. In this way, the participating co-owners achieve greater benefits (Mozas, 1999). The size of these organizations encourages their online presence because it gives them more resources to devote to online activity (Louw & Nieuwenhuizen, 2019). Several studies have highlighted organizational size as an explanatory factor for innovation and technological adoption (Wamba & Carter, 2014). In addition, according to Borges et al. (2009), information systems are used more frequently within organizations than toward the market. Therefore, a cooperative with a larger number of members will have more

website visits. Also, due to the network effect, greater social capital (i.e., the interconnected network of individuals who interact with the organization) will increase the usefulness of the website (Karoui et al., 2015) and therefore the traffic it receives. Based on these arguments, the following proposition may be formulated:

Proposition 4: Organizational size (number of members of the cooperative) positively affects the popularity of an organization's website.

One of the main problems facing agri-food entities, particularly the organizations studied here, is a lack of market orientation. ICTs provide a marketing channel for the sale of bottled wine, which captures the value added that escapes producers that sell in bulk (Triana, 2019). Thus, a market orientation is necessary for the success of an organization's online commercial activity (Borges, Hoppen, & Luce, 2009). In marketing their products, organizations oriented toward the consumer market must design a website that offers guarantees, generates a certain amount of traffic, and encourages transactions (Warlina, Siddiq, & Valentina, 2019). The sales efforts of targeting the consumer market will result in a higher quality and more popular website, which enables organizations to listen to, talk to, and interact with the customer network (Durking, McGowan, & Mckeown, 2013). Based on these arguments, the following proposition may be formulated:

Proposition 5: A market orientation (direct sale of bottled wine) is positively related to the popularity of an organization's website.

3. Data and method

3.1. Population

This study examines cooperative winemaking organizations based in the Spanish region of Castilla-La Mancha. This region has by far the largest area of vineyards and wine

production in Spain and is responsible for 5% of the world's wine production (*Cooperativas Agro-alimentarias*, 2019). Despite greater regional competition in the marketing of its wines, Castilla-La Mancha has made slow progress, and brands from this region still have a low profile in the domestic and international consumer markets. This status is due to the region's traditional focus on table wine, whose commercial outlet is primarily bulk sales. These considerations make this region an attractive context for this study.

The study population was obtained from the records of the Spanish Food Safety and Nutrition Agency (*Agencia Española de Seguridad Alimentaria y Nutrición*) of registered food companies (RGSEAA). The number of winemaking organizations in Castilla-La Mancha in 2019 was 599. Of these, 204 were cooperatives. A representative random sample was taken from each of the provinces of Castilla-La Mancha. This sample comprised 150 cooperatives, of which 83 had their own website. The details of the sample and method are shown in Table 1.

Insert Table 1 here.

The organizational data on these entities were obtained from *Cooperativas Agro-alimentarias* (Agri-food Cooperatives), which represents and protects the economic and social interests of Spanish agricultural cooperatives. Data were also collected using metrics taken directly from the Internet. The online tool *Valor de Web* (valordeweb.com) was used to obtain the number of visits to each organization's website. To calculate website quality, a checklist was completed for the website of each of the sampled organizations. In total, 35 items were checked for each website. These items refer to informative features, user interaction, and processing for online shopping. These items have been used in previous studies (Bernal et al., 2019).

3.2. Method

Fuzzy-set qualitative comparative analysis (fsQCA) was used to test the propositions. This method does not require large samples (Ragin & Rihoux, 2004; Ragin et al., 2003), so it is well-suited to this study. There are essentially two variants of this research technique. The first is crisp-set qualitative comparative analysis (csQCA), or conventional qualitative comparative analysis (QCA), which was the method initially developed by Ragin (1987), and the second is fsQCA (Ragin, 2008). By using fuzzy-set theory and Boolean logic, this second variant of QCA overcomes the main limitation of csQCA, which only permits dichotomous variables. Thus, in addition to permitting dichotomous variables, fsQCA permits the use of continuous and interval variables. However, to include continuous or interval variables in the study, prior calibration is necessary to convert these variables into fuzzy categories or fuzzy variables. Calibration of the variables consists of assigning values between 0 and 1, depending on the degree of membership (see Woodside & Zhang, 2012).

FsQCA identifies one or several antecedent combinations that are sufficient to explain a given outcome, which is analogous to a dependent variable. However, once the variables used in the study have been correctly calibrated, it is necessary to perform sufficiency analysis to check that no variable on its own explains the outcome (Schneider & Wagemann, 2010). In this study, this analysis revealed that no single variable can be considered sufficient.

This research aims to discover the relationship between the number of visits to a company's website (visits), which acts as the outcome, and a series of conditions (antecedents). The following variables were considered as antecedents: website quality (*Quality*), measured as the sum of the website quality items, which have been used in other studies (Bernal et al., 2019); the presence of the company in international markets (*International*); whether the marketed wine is organic (*Organic*); the size of the cooperative, measured as the number of members (*Coops*); and the market orientation, measured as the

direct sale of bottled wine (*Bottle*). The characteristics of the variables used in the study are summarized in Table 2.

Insert Table 2 here.

4. Results and discussion

Table 3 shows the results of the application of fsQCA to the theoretical model proposed in this study using fsQCA 3.0 software. Prior to the final application of this technique, analysis of necessary conditions was performed. This analysis revealed that no condition can be considered necessary because the individual consistency scores (Ragin, 2008) were all less than 0.90. In addition, it was verified that the coverage scores were not too low, exceeding 0.50. Thus, the absence of negative conditions for the application of this technique in the present study was verified, once the relevant tests of necessity and sufficiency had been conducted.

Insert Table 3 here.

As Table 3 shows, the overall model resulting from this analysis has a total coverage of 0.756996. Thus, in 75.70% of wine cooperatives in Castilla-La Mancha, the number of visits to the corporate website is explained by the chosen set of causal combinations (also called *configurations*). These results are consistent with the results found in the studies mentioned earlier.

The first causal configuration, which has a raw coverage of 0.286147, indicates that the combination of a high-quality website, internationalization, organic certification, and organizational size explains a high number of visits to the company website (in 28.61% of cases). The second causal configuration indicates that the combination of a high-quality website, internationalization, organic certification, and a market orientation (through the sale of bottled wine) explains a high number of visits to the corporate website in 26.61% of cases.

These results indicate that the number of visits to a company's corporate website is positively related to the quality of information and interaction shown by the website (Chiu et al., 2005; Loureiro, 2015; Ye et al., 2019), the company's activity in international markets through exports (Kim, 2019; Manyika & Lund, 2016), the organic certification of the wine (Bernal et al., 2019; Lee & Yun, 2015), the size of the cooperative (Karoui et al., 2015; Louw & Nieuwenhuizen, 2019), and the company's consumer market orientation, measured by the percentage of bottled wine sold (Durking et al., 2013; Warlina et al., 2019). Based on these results, all the proposals considered in this research may be accepted.

5. Conclusions

The Spanish wine market has a considerable imbalance between supply, where it leads the world ranking, and demand, which is low and has followed a downward trend in recent years. This situation has forced the sector to orient its sales toward foreign markets. However, this strategy has been implemented using a business model based on bulk sales, which has resulted in a loss of value added in commercial transactions. One response to this situation is the online marketing of products to end consumers. Given this background, the aim of this study is to analyze the organizational factors and commercial features that are linked to the popularity of wine organizations' websites.

The results of this study indicate that the quality of information and interaction on the website, the presence of the organization in international markets, the organic certification of the wine, the size of the cooperative, and the organization's orientation toward the consumer market positively affect the popularity of the websites of the cooperatives in this sector. These results are consistent with those of previous studies and lead to acceptance of the five propositions tested in the study.

The results should be interpreted while keeping in mind the major commercial problems highlighted earlier. In addition, it is important to consider the opportunity provided by the presence of the current digital context, which is characterized by continuous growth of e-commerce operations on the domestic and international levels. In this area, food products play an increasingly prominent role. The results provide strategic guidelines for private and public decision makers to follow if they wish to exploit the full potential of ICT.

Accordingly, commitment to greater business concentration, internationalization, the flourishing organic product market, and greater market orientation can support the development of this sector not only in conventional markets but also in digital markets.

This study focuses on the online presence of companies in the biggest wine-producing region in Spain. In the future, it would be of interest to extend the geographical scope of this study. It would also be of interest to perform comparative analyses between different types of companies (cooperatives versus corporates) and to compare the situation of Spanish companies with that of companies in other countries. Doing so would verify whether the results obtained in this study can be replicated in other contexts.

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Table 1:

Details of the sample and method

Characteristic	Details
Geographical coverage	Castilla-La Mancha, Spain
Timeframe	March to May 2019
Population	204 cooperatives
Sampling unit	Wine-producing cooperatives
Sample	150 cooperatives
Sampling error; confidence interval	4.13% sampling error; confidence interval of 95%

Source: Compiled by the authors.

Table 2:

Variables used in the fsQCA

Variable	Description	Type of variable
Visits	Number of website visits	Continuous*
Antecedents		
Antecedents	Description	Type of variable
Quality	Website quality	Continuous*
International	Involvement in foreign trade	Dichotomous**
Organic	Organic producer	Dichotomous**
Coops	Number of members in coop	Continuous*
Bottle	Sale of bottled wine	Dichotomous**

Source: Compiled by the authors.

Notes: * The continuous variables were calibrated using the fsQCA 3.0 software. ** A value of 1 was assigned if the company was involved in foreign trade, organic production, or the sale of bottled wine, respectively, and 0 otherwise.

Table 3:

Results of the fsQCA

Quality	International	Organic	Coops	Bottle	Raw coverage	Unique coverage	Consistency
●	●	●	●		0.286147	0.000000	0.911590
●	●	●		●	0.266091	0.069963	0.946888
○		●	○	●	0.236007	0.236007	0.961977
	●		●	●	0.231810	0.035681	0.844520
●		●	●	○	0.149021	0.000000	0.848606
	○	●	●	○	0.129198	0.070196	0.918739
Model coverage				0.756996			
Mode consistency				0.982494			

Source: Compiled by the authors.

Notes: (●) Black circles are used to indicate the presence of a condition. (○) White circles are used to indicate the absence of a condition. Where no circle appears, the condition is not relevant to the configuration.