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From firm’s brand identity to cluster’s brand identity: a web-based analysis of Tuscan wineries

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Abstract

Purpose – This paper aims to investigate the brand identity drivers used online by wineries and to assess cluster identity from the analysis of firms’ specific branding strategies.

Design/methodology/approach – Chianti, Chianti Classico and Brunello di Montalcino wine clusters (located in Tuscany, Italy) were selected as the set for this study. A total of 452 wineries websites were analyzed using a text frequency query, and the results were further examined through a discriminant analysis.

Findings – The theoretical framework was modeled after a careful analysis of the literature and is composed of three macro-areas of identity drivers: locational, product/process and social attributes. The analysis of winery websites shows the presence of all the drivers examined, which explain not only the wineries’ specific strategies but also the drivers of a particular cluster’s brand identity. A discriminant analysis highlighted that some drivers are able to explain the unique characteristics of the three clusters.

Originality/value – This research seeks to build a holistic investigation of all the identity drivers used by firms online. The specific brand identity focus and the holistic approach can enrich both academics and practitioners with a framework of current branding strategies.

Keywords Econometric model, Identity, Cluster, Brand, Websites, Driver, Discriminant analysis, Tuscany

Paper type Research paper

1. Introduction

The wine sector is overcrowded with brands, and differentiation is increasingly difficult (Bruwer, 2004; Johnson and Bruwer, 2007; Brochado et al., 2015). While the wine literature has examined the relationship between brand and geographical indication (Schamel, 2006; Durrieu, 2008; Teuber, 2011), packaging/label (Rundh, 2005; Boudreaux and Palmer, 2007; Laeng et al., 2016) and wine tourism (Lockshin and Spawton, 2001; Bruwer and Lesscheave, 2012) in affecting brand perceptions offline, the wineries’ online presence has mostly been ignored. Although some authors have highlighted a particular interest of wine literature in consumer behavior research studies (Lockshin and Corsi, 2012), the firm’s perspective on this topic has not been sufficiently investigated.

Many studies have focused on evaluating and describing website marketing strategies or content and design (Begalli et al., 2009; Taylor et al., 2010; Mills et al., 2012; Notta et al., 2013; Canziani and Welsh, 2016), without building a comprehensive examination of the drivers and attributes employed by wineries in the branding process. Moreover, to the best of our knowledge, only one study has investigated branding on a holistic basis, but only in an offline context (Vlachvei et al., 2012).

This study thus aims to build an all-inclusive framework to promote the academic/managerial discussion about online brand identity strategies. Brand identity expresses how
managers and owners want the brand to be perceived and conveys the firm’s culture, physical specificities, personality and relational style (Kapferer, 2012). In the wine sector, most of the actors are SMEs which pay a careful attention to marketing and technological expenses (Canziani and Welsh, 2016). Struggling with funding, these entities often do not have the necessary resources to hire a website manager or a social media manager, adding new functions or content as time goes by (Simmons et al., 2008; Canziani and Welsh, 2016). Yet websites allow wineries to communicate with consumers and other stakeholders, thus becoming a fundamental marketing strategy (Taylor et al., 2010). In the light of these considerations, our first research question is:

**RQ1.** What are the main brand identity drivers used by wineries to build their online brand identity?

It is generally accepted by the literature that, in many markets, the firm’s brand reputation and consumer evaluation of their products is closely related to the country of origin (Tse and Gorn, 1993; Phau and Prendergast, 2000; Pharr, 2005; Pappu et al., 2006). This is particularly true in the agri-food sector (Ozretic-Dosen et al., 2007; Anselmsson et al., 2014; Luceri et al., 2016) and even more in the wine industry, where there are three territorial levels: country, region and wine cluster (Papadopoulos and Heslop, 2002; Bruwer and House, 2003; Schamel, 2006; Yasin et al., 2007; Durrieu, 2008; Beebe et al., 2012; Dana et al., 2013; Josias et al., 2014). A cluster, defined as “geographic concentrations of interconnected companies and institutions in a particular field” (Porter, 1998, p. 73), has its specific population, mores and customs that identify a community, where each member takes part in the identity creation process consciously or unconsciously, thus influencing and being influenced by the shared identity (Staber, 2010; Staber and Sautter, 2011; Beebe et al., 2012; Zamparini and Lurati, 2012).

Beebe et al. (2012) emphasize how identity in wine clusters is linked to wine regions with legal recognition (e.g. appellation d’origine contrôlée in France), for which wineries receive a quality premium generating a positive effect on price. As consumers apply the perceived quality of a cluster to its members, there is a strong interest for all associates to build a common strategy to outline a positive cluster identity (CI). Given that CI has gained researchers’ attention only recently (Staber, 2010; Staber and Sautter, 2011; Beebe et al., 2012), our study aimed to answer a second research question:

**RQ2.** How does the brand identity of firms contribute to creating a brand identity of a cluster?

The research field units selected are wineries in the wine clusters in Chianti, Chianti Classico and Brunello di Montalcino, located in Tuscany (Italy). Wine clusters are a particularly revealing setting for examining identity, as they provide a controlled environment delineated by legally stated boundaries (appellations) which are also helpful for delineating membership (Beebe et al., 2012). From the analysis of firm specific branding strategies and the subsequent comparison within and between clusters, this study formulates a set of categories and subcategories of drivers which are able to explain common identity crafting trends. The branding strategies of the three clusters are then analyzed to identify the specific driver mix used to shape CI. Several theoretical studies have shown that a well-shaped and consistent brand identity can impact positively on brand equity (Madhavaram et al., 2005; Kapferer, 2012). Indeed, brand identity strategies are the guidelines that delineate well-designed integrated marketing communication strategies, which consequently impact on a firm’s brand equity (Madhavaram et al., 2005).
Unfortunately, only a few studies have tried to bridge theory with empirical evidence, and more insights are needed (Coleman et al., 2015). Even though we recognize the relevance of brand equity to evaluate the effectiveness of branding strategies, we decided to focus on brand identity to enrich the theory by:

- presenting a structured and inclusive framework of the main branding strategies employed online by wineries;
- showing usage and interactions of branding drivers; and
- opening up to possible national and international comparisons.

These comparisons can help practitioners to learn from experiences of national and foreign wineries and to enrich their branding strategies with new ideas and tools, thus building an international cross-fertilization. In addition, our findings highlight to Tuscan managers:

- what strategy they appear to be employing, thus helping them to understand if it is in line with their initial intention; and
- the differences or similarities with other regional or cluster fellows.

The same methodology can be replicated by other clusters to achieve similar findings.

The article is organized as follows. In Section 2, the theoretical framework introduces the main literature on branding. The selected samples are examined in Section 3, while Sections 4 and 5 present and discuss the findings. Section 6 draws some conclusions and Section 7 discusses possible limitations and further research topics.

2. Theoretical framework
A brand is essentially a name that guides consumer choices (Kapferer, 2012). The literature on wine has studied drivers that influence brand identity; however, how these drivers work together has not been investigated. Few studies have been conducted to build a framework of marketing strategies used online by wineries (Notta et al., 2013), and only one agri-food study to discover branding drivers (Vlahvei et al., 2013). Therefore, the scarce research upon branding calls for further investigation. The following analysis categorizes the literature on wine branding into three macro-areas: location, product and process and social.

2.1 Location
Geographical boundaries play an important role in the wine business and terroir becomes both a guarantee and a source of experience. As a guarantee, Geographical Indication (GI):

- aims to decrease consumer information asymmetries;
- can be considered a “club good” i.e. a non-rival, congestible and excludable item (Josling, 2006; Moschini et al., 2008); and
- can affect terroir value, thus creating expectations regarding quality (Johnson and Bruwer, 2007).

Both country-of-origin and region are useful branding tools to differentiate products from both foreign and national competitors (Bruwer and House, 2003). Furthermore, a territorial brand can be described as an umbrella brand, due to a strong connection between collective and individual reputation (Durrieu, 2008). As different products are branded with the same name (country or region), consumers build expectations of quality upon the umbrella that is transferred to all products branded with that name (cf Schamel, 2006). Therefore, GI can be considered a branding strategy as the umbrella brand communicates its identity to
consumers who consequently conceive a brand image (Teuber, 2011). In branding, region-of-origin has acquired a greater importance than grape varieties, which can be farmed everywhere, because what is not replicable is the terroir (Huneeus, 2005; Johnson and Bruwer, 2007).

As a source of experience, terroir becomes the engine of the wine tourism industry, which can help wineries to create loyalty, to enhance brand awareness and to improve the consumers' image of the brand (Alant and Bruwer, 2010; Byrd et al., 2016). A winery thus becomes a vehicle for communicating values, philosophy and the degree of excellence sought by the winemaker (Lockshin and Spawton, 2001). Wine tourists are interested in tasting wine and in experiencing the atmosphere and surroundings of the winery (Bruwer and Lesschaeye, 2012). In Figure 1, this macro-area is composed by territorial identification (terroir as a guarantee) and collateral experiences (terroir as a source of experience).

### 2.2 Product and process

The wine literature recognizes the presence of a set of brand constellation cues, associated with wine characteristics, that can influence consumers' perceptions (Lockshin et al., 2000; Lockshin and Hall, 2003; Durrieu, 2008). Bruwer and House (2003) highlighted the role of grape variety and style of production for the Australian market, and a recent WineMonitor study underlined the increasing purchasing impact of autochthonous grapes in the Italian and US market (Pantini, 2017). Grapes and production style thus take part in the image building process of wine regions, and are always represented by one or two grape varieties (Spawton, 1999; Lockshin et al., 2000; Bruwer and House, 2003).

The method of production also plays a fundamental role in consumers’ perceptions and choices, thus proving to be a discriminant in consumers’ choices for countries such as Italy,
French, UK, Germany, CA and South Africa (Maizza et al., 2017). In addition, a winery can use farming and business sustainability as tools to differentiate itself from competitors’ brands (Steinthal and Hinman, 2007; Atkin et al., 2012; Annunziata et al., 2018). In Figure 1, this macro-area is divided into two categories: product characteristics and process characteristics. The former is made up of color, grape variety, style and vintage. The latter accounts for the influence on firms’ identity of production methodologies and environmental and sustainability measures. The increasing power of product and process is highlighted by recent studies on consumer behavior (Pantini, 2017; PwC, 2017), thus becoming crucial drivers for wineries (Bernabéu et al., 2008; Santini et al., 2013).

2.3 Social attributes
Figure 1 shows this macro-area divided into two categories of drivers: governance attributes and external approval. Governance attributes, such as winemaker or family, are brand constellation cues (Lockshin et al., 2000; Lockshin and Hall, 2003). Family is a cross-sector branding strategy (Binz Astrachan and Astrachan, 2015), which increases sales, captures consumers’ attention (Craig et al., 2008), and is widely employed in the wine sector (Maguire et al., 2013; Gallucci et al., 2015). A branding strategy based on family should communicate history and heritage, balance innovation and tradition and translate family values (trustworthiness and long-term value orientation) into social actions, thus promoting local community development and improving workers’ conditions (Binz Astrachan and Astrachan, 2015). In the wine sector, family branding creates long-lasting competitive advantages (Gallucci et al., 2015).

External approval is composed of third-party certifications or reviews (Vlachvei et al., 2012) and social media influences (Kozinets et al., 2010; Vlachvei et al., 2012; Kabadayi and Price, 2014; Tsimonis and Dimitriadis, 2014; Vlachvei and Notta, 2015; Martinez-Lopez et al., 2016). The online panorama allows wineries to use new flexible tools that enhance SMEs competitiveness on a global stage, thus decreasing the necessity for large investments (Pentina et al., 2012; Adegbuyi et al., 2015) and offering a wide variety of promotional items at a lower cost (Broekemier et al., 2015; Dehghani and Tumer, 2015). In this panorama, Word-of-Mouth (WOM) and electronic-WOM (e-WOM) can influence brands’ perceptions (Malhotra et al., 2013; Tsimonis and Dimitriadis, 2014; Wallace et al., 2014), thus becoming powerful strategic tools (Kozinets et al., 2010). Owing to social media, firms can build or maintain relationship, gather information or feedback and monitor social performances (Malhotra et al., 2013; Tsimonis and Dimitriadis, 2014). The effectiveness of social media for branding has been highlighted by several studies (Kabadayi and Price, 2014; Tsimonis and Dimitriadis, 2014; Gao and Feng, 2016), whereas the wine literature has focused mainly on quantitative evaluation of intensity, fullness and responsiveness (Vlachvei and Notta, 2015) to evaluate the social media presence of wineries. Wine Awards are consumer-oriented certifications, which can drive choices, thus lowering the amount of information that a consumer needs to make a purchase (Vlachvei et al., 2012). These certifications influence consumers’ preferences, and consequently impact on the image of the brand.

3. Research design and methodology
3.1 Tuscan wineries
In 2015, Tuscany – only seventh among a total of 20 administrative regions in Italy in terms of liters of wine produced – accounted for 16.42 per cent of all Italian wine exports, thus showing a special ability to produce high value wines (Unione Italiana Vini, 2017). Within Tuscany, three DOCG clusters were selected. Their main features are described in Table I.
These clusters thus show different brand values, market positioning, volumes of production and geographical extension, even though they are based in the same region. This characteristic enabled us to:

- avoid biases due to different regional identities; and to
- understand how and if different clusters employ the regional brand.

Furthermore, these clusters represent a unique case study because of their historical background and recent branding choices.

Chianti is among the oldest Italian wines and was the first to be protected with an ancestral form of denomination enacted by Grand Duke Cosimo III in 1716 (Consorzio Chianti Classico, 2016). The decree included only 70,000 hectares, which are now known as Chianti Classico. However, before gaining its desired independence from Chianti, Chianti Classico was included in the Chianti DOC in 1967 (becoming a DOCG in 1984). This DOCG includes a wide variety of Chianti producers, from different areas of Tuscany and with different qualities of products. Consequently, Chianti Classico fought to obtain DOCG status, becoming a specific denomination in 1996. In 2017, the price at source of Chianti Classico is nearly two times greater than Chianti (Ismea, 2017b). Even though Brunello is the “youngest” (it originated in the mid-nineteenth century), it became DOC in 1966 and DOCG in 1980, thus before Chianti (Consorzio del Vino Brunello di Montalcino, 2017). However, Brunello only achieved worldwide success in 1995 (Rivella, 2010). In our research, we focused on the following three clusters which are all from the same region:

1. the oldest (Chianti Classico);
2. the most valuable brand (Chianti); and
3. the most expensive Italian wine in terms of price at source, Brunello di Montalcino.

3.2 Empirical setting and sample selection

We decided to use consortium firms, in line with previous studies on different features of wine CI (Zamparini and Lurati, 2012; Zamparini and Lurati, 2017). The consortiums of Chianti, Chianti Classico and Brunello di Montalcino all have a list of associated wineries which thus enabled us to focus on a large sample. The lists of members on the consortium webpages is the best and most-up-to-date system for identifying all firms that contribute consciously or unconsciously to CI creation and, most importantly, which want to be
identified with that cluster. Only the websites with English translations were selected to create a database that would be able to support international comparisons in future research. In addition, as Anglophone countries represent the clear majority of Tuscan wine buyers, this restriction does not create a significant exclusion of wineries (only 6 per cent of the total sample population).

The initial list found on consortiums’ websites included 117 affiliated wineries for Chianti, 208 for Brunello di Montalcino, and 388 for Chianti Classico. Due to the absence of websites, duplicate links, websites without content, lack of English translations, firms which have hospitality as their core business, and firms (16) that belong to more than one cluster (discarded to avoid biases), the final sample was made up of 452 websites: 84 Chianti, 146 Brunello di Montalcino and 222 Chianti Classico.

3.3 Methodology

Data were gathered through N-Capture, which enables page by page downloads of the content, pictures and technical sheets of websites. The downloaded materials were checked several times to remove incomplete or corrupted files. All data were uploaded onto N-Vivo 11 divided by consortium, and a total of 7245 files were collected. N-Vivo was selected to perform a content analysis with an individual word being the measurement unit. A Word Frequency Query was run for each consortium. The top 1,000 words in terms of frequency were analyzed for each cluster and those words not useful to be employed in the analysis were discarded; the final number of words selected was 457. These words were divided into the framework categories and used in the website analysis. Thus, each website was analyzed on the basis of these categories to find their frequency weighted on the total amount of words in each website. Words belonging to more than one category were differentiated on the basis of their specific meaning.

The results were uploaded onto Stata 15.0 to perform a multiple discriminant analysis. The purpose of this analysis is to estimate the relationship between non-metric variables, clusters, and metric independent variables, categories and subcategories of identity drivers (Hair et al., 2010). This technique is particularly suited to explaining and predicting the bases of membership of different groups, represented by non-metric variables. Another advantage of discriminant analysis is the reduction of “analyst’s space dimensionality” (Altman, 1968, p. 592) which is given by number of non-metric variables (groups defined a priori) minus one. Consequently, two discriminant functions were designed where each independent variable shows a variate’s weight maximizing the differences between groups for each function (Hair et al., 2010). The function structure is

\[ Z_{jk} = a + W_1X_{1k} + W_2X_{2k} + \ldots + W_nX_{nk}, \]

where \( Z_{jk} \) is the discriminant Z score for function \( j \) and object \( k \), \( a \) is the intercept, \( W_i \) is the discriminant weight for independent variable \( i \) and \( X_{ik} \) is the independent variable \( i \) for object \( k \). In this way, the independent variables are plotted in two dimensions, which represent the two discriminant functions.

4. Results

4.1 Brand identity drivers

In our sample of firms, we identified six categories and eighteen subcategories of drivers. Table II displays the mean presence per cluster of each driver, weighted by the total amount of words. The model can capture on average 23.06 per cent of words on Chianti websites, 23.87 per cent on Chianti Classico and 25.06 per cent on Brunello. These are high percentages given that, in the word count of a website, even “or”, “a”, “and”, phone numbers, etc., are included.
The 457 words identified during the analysis and divided into the categories and subcategories, were then employed to answer the second research question examining to what extent such words are found on the websites of the wineries for each consortium.

4.2 Identity drivers and wine clusters
Table III outlines descriptive statistics and Pearson’s correlation among subcategories of identity drivers for Chianti, Chianti Classico and Brunello di Montalcino. The correlation indicators do not reveal problems in terms of multicollinearity, as confirmed by low VIF scores and high tolerance for all drivers (see Appendix). A multiple discriminant analysis was performed. Table IV outlines the two features of the discriminant functions, where the first function explains the larger proportion of variance with a high significance. Table V shows ANOVA and Standard Canonical discriminant function coefficients.

The F values highlight a strong significance for region, locality, hospitality and production as discriminant factors. On the other hand, environment and sustainability, wine and food, denomination and tradition show a lower significance. The drivers’ ability to discriminate among clusters is summarized in Table VI.

The analysis revealed that region is one of the drivers that discriminates Chianti from the other two clusters, while Hospitality discriminates Chianti Classico from the other two. Production and Locality are particularities of Brunello di Montalcino. Low discriminant factors overlap single clusters: Wine and Food, Tradition, and Environment and

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Chianti (%)</th>
<th>Chianti Classico (%)</th>
<th>Brunello di Montalcino (%)</th>
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<tbody>
<tr>
<td><strong>Product/process</strong></td>
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<tr>
<td>Wine Characteristics</td>
<td>6.92</td>
<td>7.61</td>
<td>7.41</td>
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<tr>
<td>Process Characteristics</td>
<td>5.95</td>
<td>6.15</td>
<td>8.11</td>
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<tr>
<td>Production</td>
<td>5.67</td>
<td>5.93</td>
<td>7.94</td>
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<tr>
<td>Envir. and Sust.</td>
<td>0.28</td>
<td>0.22</td>
<td>0.17</td>
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<td><strong>Locational</strong></td>
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<tr>
<td>Territorial identification</td>
<td>3.57</td>
<td>3.33</td>
<td>4.07</td>
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<tr>
<td>Denominations</td>
<td>0.69</td>
<td>0.44</td>
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<tr>
<td>Locality</td>
<td>1.44</td>
<td>1.75</td>
<td>2.67</td>
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<td>1.00</td>
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<td>Country</td>
<td>0.44</td>
<td>0.49</td>
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<tr>
<td>Collateral Experience</td>
<td>3.90</td>
<td>4.26</td>
<td>2.94</td>
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<tr>
<td>Wine and Food</td>
<td>1.14</td>
<td>1.16</td>
<td>0.92</td>
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<tr>
<td>Hospitality</td>
<td>1.99</td>
<td>2.31</td>
<td>1.15</td>
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<td>Photo Gallery</td>
<td>0.25</td>
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<td>Estate</td>
<td>0.52</td>
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<td><strong>Social</strong></td>
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<td>External Approval</td>
<td>1.49</td>
<td>1.35</td>
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<td>Awards</td>
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<td>Press</td>
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<td>Social Networks</td>
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<td>Governance Attributes</td>
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<td>Family</td>
<td>0.27</td>
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<tr>
<td>Innovation</td>
<td>0.05</td>
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<tr>
<td>Tradition</td>
<td>0.53</td>
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<td>Story telling</td>
<td>0.38</td>
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<td>0.42</td>
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<td>Total</td>
<td>23.06</td>
<td>23.87</td>
<td>25.06</td>
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Table II. Mean of identity drivers for each cluster
Table III.
Descriptive statistics and correlations

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<td>[2] Production</td>
<td>0.197</td>
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<td>[3] Envir. and Sust.</td>
<td>−0.047</td>
<td>0.085</td>
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<td>[4] Denominations</td>
<td>0.151</td>
<td>0.081</td>
<td>−0.048</td>
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<td>[5] Locality</td>
<td>0.096</td>
<td>0.074</td>
<td>−0.094</td>
<td>0.018</td>
<td>1</td>
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<tr>
<td>[6] Region</td>
<td>0.069</td>
<td>−0.006</td>
<td>0.052</td>
<td>−0.04</td>
<td>−0.000</td>
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</tr>
<tr>
<td>[7] Country</td>
<td>−0.002</td>
<td>−0.007</td>
<td>0.045</td>
<td>−0.012</td>
<td>0.213</td>
<td>0.073</td>
<td>1</td>
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<tr>
<td>[8] Wine and Food</td>
<td>0.243</td>
<td>0.132</td>
<td>−0.038</td>
<td>−0.008</td>
<td>0.007</td>
<td>0.210</td>
<td>0.022</td>
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<tr>
<td>[9] Hospitality</td>
<td>−0.146</td>
<td>−0.269</td>
<td>−0.014</td>
<td>−0.114</td>
<td>0.047</td>
<td>0.190</td>
<td>0.116</td>
<td>0.220</td>
<td>1</td>
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<tr>
<td>[10] Photo Gallery</td>
<td>−0.053</td>
<td>−0.004</td>
<td>−0.015</td>
<td>−0.068</td>
<td>0.039</td>
<td>0.007</td>
<td>0.113</td>
<td>0.099</td>
<td>0.230</td>
<td>1</td>
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<tr>
<td>[11] Estate</td>
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<td>0.043</td>
<td>0.077</td>
<td>0.046</td>
<td>0.078</td>
<td>0.013</td>
<td>0.030</td>
<td>0.108</td>
<td>1</td>
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<tr>
<td>[12] Awards</td>
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<td>−0.077</td>
<td>−0.059</td>
<td>0.123</td>
<td>−0.013</td>
<td>0.023</td>
<td>0.037</td>
<td>−0.059</td>
<td>−0.083</td>
<td>0.049</td>
<td>0.066</td>
<td>1</td>
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<td></td>
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</tr>
<tr>
<td>[13] Press</td>
<td>0.072</td>
<td>0.114</td>
<td>−0.041</td>
<td>0.101</td>
<td>0.032</td>
<td>0.007</td>
<td>0.187</td>
<td>0.018</td>
<td>0.013</td>
<td>0.122</td>
<td>0.097</td>
<td>0.241</td>
<td>1</td>
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</tr>
<tr>
<td>[14] Social Networks</td>
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<td>−0.024</td>
<td>0.108</td>
<td>0.022</td>
<td>0.116</td>
<td>0.053</td>
<td>0.039</td>
<td>0.104</td>
<td>0.032</td>
<td>0.033</td>
<td>0.056</td>
<td>0.268</td>
<td>1</td>
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</tr>
<tr>
<td>[15] Family</td>
<td>−0.026</td>
<td>0.026</td>
<td>−0.063</td>
<td>−0.088</td>
<td>0.006</td>
<td>−0.042</td>
<td>−0.019</td>
<td>−0.011</td>
<td>−0.011</td>
<td>0.038</td>
<td>0.143</td>
<td>−0.050</td>
<td>−0.046</td>
<td>−0.044</td>
<td>1</td>
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</tr>
<tr>
<td>[16] Innovation</td>
<td>−0.012</td>
<td>0.031</td>
<td>0.052</td>
<td>0.015</td>
<td>−0.073</td>
<td>0.017</td>
<td>0.005</td>
<td>0.036</td>
<td>−0.053</td>
<td>−0.074</td>
<td>0.069</td>
<td>0.033</td>
<td>−0.018</td>
<td>−0.038</td>
<td>0.236</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>[17] Tradition</td>
<td>0.077</td>
<td>−0.054</td>
<td>−0.005</td>
<td>−0.015</td>
<td>−0.012</td>
<td>0.080</td>
<td>−0.023</td>
<td>0.010</td>
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<td>0.203</td>
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<tr>
<td>[18] Story telling</td>
<td>0.008</td>
<td>0.126</td>
<td>0.012</td>
<td>−0.023</td>
<td>−0.025</td>
<td>0.000</td>
<td>0.094</td>
<td>0.100</td>
<td>0.015</td>
<td>0.152</td>
<td>0.170</td>
<td>0.004</td>
<td>0.067</td>
<td>−0.037</td>
<td>0.215</td>
<td>0.134</td>
<td>0.130</td>
<td>1</td>
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<tr>
<td>[19] Chianti</td>
<td>−0.073</td>
<td>−0.115</td>
<td>0.106</td>
<td>0.132</td>
<td>−0.207</td>
<td>0.314</td>
<td>0.064</td>
<td>0.030</td>
<td>0.036</td>
<td>−0.034</td>
<td>0.005</td>
<td>0.034</td>
<td>−0.010</td>
<td>0.061</td>
<td>−0.011</td>
<td>0.018</td>
<td>0.038</td>
<td>−0.001</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[20] Chianti Classico</td>
<td>−0.013</td>
<td>−0.158</td>
<td>0.035</td>
<td>−0.087</td>
<td>−0.148</td>
<td>0.026</td>
<td>0.036</td>
<td>0.104</td>
<td>0.222</td>
<td>0.018</td>
<td>−0.043</td>
<td>−0.025</td>
<td>−0.061</td>
<td>0.031</td>
<td>−0.026</td>
<td>0.049</td>
<td>0.076</td>
<td>−0.071</td>
<td>−0.469</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>[21] Brunello</td>
<td>0.075</td>
<td>0.264</td>
<td>−0.125</td>
<td>−0.016</td>
<td>0.331</td>
<td>−0.289</td>
<td>0.016</td>
<td>−0.136</td>
<td>−0.268</td>
<td>0.008</td>
<td>0.050</td>
<td>−0.002</td>
<td>0.073</td>
<td>−0.083</td>
<td>0.037</td>
<td>−0.068</td>
<td>−0.129</td>
<td>0.077</td>
<td>−0.330</td>
<td>−0.679</td>
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</tr>
<tr>
<td>Mean</td>
<td>0.067</td>
<td>0.065</td>
<td>0.002</td>
<td>0.005</td>
<td>1.970</td>
<td>0.623</td>
<td>0.488</td>
<td>0.011</td>
<td>0.019</td>
<td>0.003</td>
<td>0.005</td>
<td>0.006</td>
<td>0.003</td>
<td>0.003</td>
<td>0.042</td>
<td>0.466</td>
<td>0.004</td>
<td>0.186</td>
<td>0.491</td>
<td>0.323</td>
<td></td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.070</td>
<td>0.039</td>
<td>0.003</td>
<td>0.007</td>
<td>1.506</td>
<td>0.596</td>
<td>0.335</td>
<td>0.010</td>
<td>0.021</td>
<td>0.005</td>
<td>0.007</td>
<td>0.012</td>
<td>0.006</td>
<td>0.005</td>
<td>0.004</td>
<td>0.088</td>
<td>0.502</td>
<td>0.004</td>
<td>0.389</td>
<td>0.501</td>
<td>0.468</td>
</tr>
<tr>
<td>Min</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Max</td>
<td>1.329</td>
<td>0.214</td>
<td>0.033</td>
<td>0.068</td>
<td>10.680</td>
<td>4.650</td>
<td>3.420</td>
<td>0.066</td>
<td>0.138</td>
<td>0.028</td>
<td>0.038</td>
<td>0.125</td>
<td>0.037</td>
<td>0.031</td>
<td>0.028</td>
<td>0.580</td>
<td>5.540</td>
<td>0.032</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Notes: N = 452. Correlation coefficients greater than 0.09 in absolute value are statistically significant at 95%
Sustainability are drivers shared by both Chianti and Chianti Classico, while Denomination belongs to both Chianti and Brunello di Montalcino. Non-discriminant are drivers which are employed by all clusters, without substantial differences.

Figure 2 illustrates the loading plot, and Figure 3 reports the mean of standardized variables.

### Table IV.

#### Canonical linear discriminant analysis

<table>
<thead>
<tr>
<th>Function</th>
<th>Canon. corr.</th>
<th>Eigen-value</th>
<th>Variance (proportion)</th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>Prob. &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.583</td>
<td>0.515</td>
<td>0.884</td>
<td>6.522</td>
<td>36</td>
<td>864</td>
<td>0.000</td>
</tr>
<tr>
<td>2</td>
<td>0.252</td>
<td>0.068</td>
<td>0.116</td>
<td>1.726</td>
<td>17</td>
<td>433</td>
<td>0.036</td>
</tr>
</tbody>
</table>

### Table V.

#### ANOVA and std. canonical discriminant function coefficients

<table>
<thead>
<tr>
<th>Variables</th>
<th>$R^2$</th>
<th>F</th>
<th>Std. canonical discriminant function 1 coefficients</th>
<th>Std. canonical discriminant function 2 coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wine charac.</td>
<td>0.008</td>
<td>1.848</td>
<td>-0.091</td>
<td>0.263</td>
</tr>
<tr>
<td>Production</td>
<td>0.071</td>
<td>17.098***</td>
<td>-0.359</td>
<td>-0.103</td>
</tr>
<tr>
<td>Envir. and Sust.</td>
<td>0.020</td>
<td>4.676**</td>
<td>0.231</td>
<td>-0.086</td>
</tr>
<tr>
<td>Denominations</td>
<td>0.018</td>
<td>4.146*</td>
<td>-0.046</td>
<td>-0.170</td>
</tr>
<tr>
<td>Locality</td>
<td>0.120</td>
<td>30.657***</td>
<td>-0.638</td>
<td>-0.109</td>
</tr>
<tr>
<td>Region</td>
<td>0.137</td>
<td>35.75***</td>
<td>0.559</td>
<td>-0.620</td>
</tr>
<tr>
<td>Country</td>
<td>0.004</td>
<td>0.945</td>
<td>0.012</td>
<td>0.273</td>
</tr>
<tr>
<td>Wine and Food</td>
<td>0.019</td>
<td>4.295*</td>
<td>0.181</td>
<td>0.194</td>
</tr>
<tr>
<td>Hospitality</td>
<td>0.075</td>
<td>18.114***</td>
<td>0.227</td>
<td>0.582</td>
</tr>
<tr>
<td>Photo gallery</td>
<td>0.001</td>
<td>0.256</td>
<td>-0.057</td>
<td>0.021</td>
</tr>
<tr>
<td>Estate</td>
<td>0.003</td>
<td>0.593</td>
<td>-0.011</td>
<td>-0.051</td>
</tr>
<tr>
<td>Awards</td>
<td>0.001</td>
<td>0.283</td>
<td>0.053</td>
<td>-0.060</td>
</tr>
<tr>
<td>Press</td>
<td>0.006</td>
<td>1.263</td>
<td>-0.095</td>
<td>-0.167</td>
</tr>
<tr>
<td>Social networks</td>
<td>0.008</td>
<td>1.843</td>
<td>0.143</td>
<td>0.031</td>
</tr>
<tr>
<td>Family</td>
<td>0.001</td>
<td>0.309</td>
<td>-0.042</td>
<td>-0.081</td>
</tr>
<tr>
<td>Innovation</td>
<td>0.005</td>
<td>1.041</td>
<td>0.067</td>
<td>0.196</td>
</tr>
<tr>
<td>Tradition</td>
<td>0.017</td>
<td>3.886*</td>
<td>0.183</td>
<td>0.039</td>
</tr>
<tr>
<td>Story telling</td>
<td>0.007</td>
<td>1.470</td>
<td>-0.138</td>
<td>-0.243</td>
</tr>
</tbody>
</table>

**Notes:** *p < 0.05; **p < 0.01; ***p < 0.001

### Table VI.

#### Summary of the discriminant power for the variables used

<table>
<thead>
<tr>
<th>High discriminant power</th>
<th>Low discriminant power</th>
<th>Non discriminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>Denomination</td>
<td>Wine characteristics</td>
</tr>
<tr>
<td>Locality</td>
<td>Tradition</td>
<td>Country</td>
</tr>
<tr>
<td>Production</td>
<td>Envir. and Sust.</td>
<td>Photo gallery</td>
</tr>
<tr>
<td>Hospitality</td>
<td>Wine and Food</td>
<td>Estate</td>
</tr>
<tr>
<td></td>
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<td>Awards</td>
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<tr>
<td></td>
<td></td>
<td>Press</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social Networks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Family</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Story telling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Innovation</td>
</tr>
</tbody>
</table>
5. Discussion
These results confirm our framework’s ability to explain the online branding strategies of wineries.

To answer the first research question, it is interesting to note that several offline branding strategies were employed. *Product and Process* show the highest incidence for all clusters, thus highlighting their significance as identity drivers. Our findings regarding Production are in line with those of Maizza *et al.* (2017), which emphasize the influence of methods of production on consumer preferences. Therefore, production is a vehicle to communicate quality, pursuit of excellence and attention to detail, all of which help to create a firm’s identity. Even though the literature (Steinthal and Hinman, 2007; Atkin *et al.*, 2012) highlights that environment and sustainability differentiate a brand from the mass, in our sample, this driver shows a low percentage of usage and discriminant power.

In terms of *Location*, territorial identifications are employed by all clusters. Within this category, the presence of *Locality* should be emphasized as a new identity driver able to differentiate a high-quality and well-known wine zone from broader geographic indication (e.g. region or country). The literature has evolved from considering the positive impact of country-of-origin (Yasin *et al.*, 2007), to region (Johnson and Bruwer, 2007; Bruwer and Johnson, 2010) seen as a branding strategy able to differentiate products not only from foreign competitors but also from domestic (Bruwer and House, 2003).

However, our results show a further evolution of territorial identification, i.e. from regional to local branding. If a region is seen as an umbrella brand, each product branded
with region’s name contributes to quality perceptions, therefore both high-quality and low-quality wines. Hence, if a Locality produces wines of higher-quality than those of other wineries in different locations but in the same region, it is a logical consequence to brand the name of the Locality to differentiate its particular quality, thus avoiding or limiting region-of-origin associations. A possible drawback of this strategy could be a dilution effect, thus decreasing the ability of territorial identification to act as a differentiation tool and to carry clear values in order to build a solid identity.

In addition, websites allow wine enthusiasts to gain information about winery tours, tastings and to book holidays on the farm, thus enabling wineries to reach consumers without any mediation. In fact, collateral experiences can influence brand association and perceptions (Lockshin and Spawton, 2001; Alant and Bruwer, 2010), therefore having a non-mediated communication instrument allows wineries to convey their preferred identity message.

Our analysis supports these previous findings. In fact, hospitality is widely used by wineries and discriminates between the three clusters.

Regarding Social attributes, our results highlight the presence of the family branding driver, and this in line with the wine literature (Maguire et al., 2013; Gallucci et al., 2015). Binz Astrachan and Astrachan (2015) proposed three brand themes (storytelling, tradition and innovation), which are linked with families. They also stressed the need to balance...
Tradition with Innovation to avoid negative customer perceptions. Our research findings show a different picture for the Tuscan wine business, where firms tend to focus on Tradition to convey their identity.

Our research reveals not only which drivers are employed, but also how wineries combine them in each consortium (Table II). As Figure 2 highlights, these drivers discriminate between the branding strategies of clusters, thus showing differential usage of drivers. However, it should be highlighted that CI is not necessarily a shared strategy of cluster’s members, but could be a silent process not founded on mutual support (Staber, 2010). Therefore, we are not saying that these results are outcomes of a cluster strategy, but that what they reveal could be useful for the winery consortiums.

The discriminant analysis highlights four drivers able to differentiate branding strategies of the three clusters. The non-discriminant (and low-discriminant) factors are unable to identify specific drivers for one cluster, as they are used similarly by all clusters (or at least by two of them). Production and Locality are what distinguish the identity strategy of Brunello di Montalcino – one of the top Italian quality wines and the highest priced at source (Ismea, 2017b). The fact that Brunello uses Locality as an identity driver supports the above-mentioned idea of differentiating high-quality clusters from the broader varieties in the same region. A small production zone can be easily linked with higher quality when compared to an entire region. In addition, highlighting production capabilities and particularities is a way to show product excellence, emphasizing the unique knowhow of the cluster. Excellence of terroir and superior knowhow are the fundamental factors in Brunello’s identity.

On the other hand, Chianti Classico – which has only recently become an autonomous DOCG – is struggling to be recognized worldwide and stresses hospitality as its main discriminant driver. The Chianti cluster – the top Italian wine in terms of brand value (WineNews, 2015) – covers a number of hectares seven times larger than Brunello and twice as large as Chianti Classico, with a production ten times larger than Brunello and twice as large as Chianti Classico. This massive production can only benefit from associations with a wine region such as Tuscany; therefore, region is the main driver used by this cluster.

6. Conclusions
This study enriches the wine literature with a framework of brand identity drivers employed online, which would be useful for future research. Indeed, the strategic mix of identity drivers presented opens up to further exploration focused on understanding the most suitable combination of drivers. In addition, this framework is a first attempt to capture online brand identity strategies and could support researchers in conducting international comparisons.

From a practitioner’s perspective, we believe that this study is valuable as it shows an:

- up to date list of online brand identity drivers; and
- three different strategic mixes to take into consideration in future managerial choices.

For winery managers, these findings can enrich and guide their analysis of the online competitive scenario, thus offering a road map to reach a clearer understanding of what competitors are doing and of what the winery can do to differentiate itself. In addition, managers can understand if the employed branding strategy is in line or not with their cluster or regional fellows. This can help wineries to build consistent long-term strategies, thus increasing the quality of managerial decisions regarding brand identity.

Regarding clusters, with a better understanding of firms’ strategies, consortiums can better protect and promote their members’ needs, by influencing national, regional and local
legislative authorities to promote more suitable laws and interventions. Our results should help local authorities to understand what kind of identity is being communicated by the members of a cluster, thus enabling consortium managers to improve or change current strategies and avoiding individual strategies that could be detrimental for the whole cluster. In addition, we provide them with a methodology that can be easily replicated everywhere. Therefore, consortium managers will be able to plan long-term CI branding strategies at a central level, thus taking account new competitors, market conditions and consumers trends. This will:

- enhance the coordination of the whole cluster;
- improve the quality of its decisional choices;
- enhance the consistency and quality of the cluster brand identity; and
- be helpful for both SMEs and large firms.

Through their consortium, SMEs will be able to access fundamental data at a lower cost, thus increasing their managerial and marketing knowhow. This improvement will enable SMEs to adopt better quality standards, thus enhancing the whole CI and decreasing confusion and misconceptions. Large firms will gain a well-shaped cluster brand identity, thus having a qualitative source of distinction (membership of a cluster) to employ in the international competitive panorama.

Finally, individual firms and clusters can replicate this methodology of analysis to gain more insights into competitors and to monitor intra-clusters trends. Given that a well-designed and consistent brand identity can positively impact on brand equity (Madhavaram et al., 2005), a whole cluster should be able to benefit from better designed and consistent brand identity strategies for individual wineries. This, in turn, would increase the brand equity of individual wineries and consequently the brand equity of a cluster.

7. Limitations and further research

This research does not take into account those firms that are not listed on consortiums’ websites and is composed only of Tuscan firms. However, our decision to focus on consortiums means that we had access to a complete list of current members, showing those firms which identify with and wish to be members of a cluster and which take part in the identity creation process. Another possible limitation is that we focused exclusively on words rather than images which also influence brand associations. This focus on words excluded all the social media logos, which were impossible to count through the text query employed; therefore, the relevance of this driver may be underestimated. Furthermore, the word analysis does not capture concepts that are expressed with uncommon words, or that should be read between the lines, or that may be related to where (e.g. home page or peripheral page) they appear on the website. Finally, we cannot bridge our brand identity findings with any numerical inferences of brand equity improvement or deterioration, thus leaving open this topic for further investigations.

It would be interesting to investigate differences in the identity drivers pool through a cross-national comparison. Clusters such as the Napa Valley, Paso Robles, Russian River, Barossa Valley, Saint-Emilion and Pomerol will show different strategies enhancing the reliability of the identity drivers’ framework and further increasing insights for building strong CI. Additionally, governance typology (family vs non-family) and their brand identity choices should be investigated. Research could also be conducted into identity composition compared to firms’ or cluster’s performances, and also looking at the impact of drivers on consumers.
References


Further reading


Appendix

About the authors
Matteo Devigili received a master’s degree in Accounting and Management from Siena University (Italy) in 2017. In the same year, he started PhD in Development Economics and Local Systems held by Trento University in collaboration with Florence University. His research interests include marketing and management, international management and innovation management.

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Positioning of wine tourism websites across different country winescapes
A lexical analyses and implications

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Abstract
Purpose – This paper aims to investigate the extent to which wine tour-operating companies are successfully using their websites to communicate persuasive and meaningful differences to customers in their quest to clearly position their product offering.

Design/methodology/approach – Text data are collected from 250 websites that promote wine tourism in five different countries’ winescapes. Lexical, regression and hierarchical clustering analyses are used.

Findings – Lexical analysis using DICTION can distinguish among websites from different countries’ winescapes, and French wines obtain the best mean review scores from customers, while US, Napa Valley, websites obtain the lowest scores. DICTION dimensions allow for meaningful clusters and can also predict TripAdvisor’s mean review scores.

Practical implications – There is a need to pay better attention in the development of website content and the critical role that both syntax and semantics can play in facilitating the use of a firm’s website, specifically in terms of clear positioning.

Originality/value – The study uses lexical analyses of website narratives to understand the current positioning of firms.

Keywords Wines, Tourism management, Cluster analysis, Wine tourism, Lexical analysis

Paper type Research paper

Introduction
Wine and winemaking can be traced back to the dawn of civilisation itself, and the discovery of a pottery jar containing traces of the beverage, shows that Persians were already enjoying wine more than five thousand years ago (Soleas et al., 1997). Wine is much more than just an alcoholic beverage, and throughout the years it has been associated with major social, cultural, religious and economic events. Wine is an experiential and hedonistic product (Bruwer and Alant, 2009) and has a plethora of nuances and unique characteristics (Mills et al., 2011).

The distinctive characteristics and consumption experience of wine fostered the rise of wine tourism in regions where there is adequate terrain for wine production. Research pertaining to this area started to develop around the 1990s with competitive positioning of
Wine tourism websites

There is no general consensus pertaining to the definition of wine tourism and its conceptualisation has not followed a uniform approach (Getz and Brown, 2006; Gómez et al., 2015). The most widely used definition in the literature is attributed to Hall (2000), who defines it as the “visitation of 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”. In similar vein, Getz et al. (1999) describe wine tourism as being an integration of tourist attractions, organised visits to favourite destinations and an opportunity for wine estates to educate their clients and attempt to promote their wine. According to Mitchell et al. (2002), most researchers have looked at supply side issues, from a wine producers’ perspective. This led scholars such as Williams and Dossa (2003) to suggest that researchers should focus on attempting to elicit those experiential attributes, that seem to bundle several components of the entire wine tourism experience together (Getz and Brown, 2006). Charters and Ali-Knight (2002) suggest that wine tourism includes lifestyles, experience, education, art, wine and food tasting and actual wine sales. Based on these assumptions, one can conclude that wine tourism is made up of three major dimensions:

(1) the business or consumer dimension consisting of wine buffs or other buyers, eager to explore the potential of some particular vintage;

(2) the self-education dimension, where visitors seek to better understand the complex processes underpinning wine production, or to improve their personal wine tasting skills; and

(3) the explorer dimension, where visitors are more interested in exploring the spectacular scenery, which is synonymous with many wine-producing regions.

Mitchell et al. (2002) hold that “the desires to purchase wine” and travellers desire to “enhance their knowledge about wine” are two antecedents that influence the demand for wine tourism. However, Dodd and Bigotte (1997) argue that wine tourists are a diverse group. Therefore, there are those to whom wine consumption is a priority and who ultimately travel to purchase wine. On the other hand, there are others who are more interested in exploring the area. Sparks (2007), who conducted research in Australia, concludes that the three unique characteristics of wine tourism are destination experience, core wine experience and personal development. In this respect, Peters (1997) suggests that wine destinations may be specifically motivated by wine variety, but more generally by the grape wine region, or winescapes, as they are collectively referred to.

Wine tourism websites
Recent advances in information and communication technologies have had a significant impact on tourism to the extent that consumers actively search the Internet before planning their trip (Choi et al., 2007). This development has had a significant impact generally but especially in terms of travel and accommodation choices (Law et al., 2009). The opportunities brought about by information technology developments have provided a new impetus for the hospitality industry, both in terms of marketing possibilities and sales opportunities (Schegg and Scaglione, 2013). Indeed, by 2004, the travel and tourism sector was generating the highest number of online transactions in terms of volume (Werthner and Ricci, 2004).

Wine producers have recognised the potential for wine tourism and have accordingly launched websites promoting this activity (Neilson et al., 2010). Despite the changes brought about by Web 2.0, specifically its facilitation of two-way communication, traditional, corporate brochure-type websites, which seem to have remained firmly stuck in the Web 1.0 era (Berthon et al., 2012), remain prevalent in the pursuit of both online direct marketing and for corporate reputation purposes. Websites with a corporate reputation objective are those that are not designed to generate sales but to provide essential information to customers whereas online direct marketing websites consist of platforms intended for the sales of
products and services. Web 2.0 has provided a platform that facilitates the proliferation of social media, allowing traditional website owners to link their website to their social media channels. The latter include: review websites, blogs, community driven discussion sites and price hunting sites indicating price trade-offs (Mills *et al.*, 2012).

Wine tour-operating firms seem to focus on information dissemination and selling as their major objectives. As they seek to attract attention and increase website traffic, website managers usually strive to link their sites to popular social media sites such as *TripAdvisor*. Customer reviews on such independent electronic sites provide a useful marketing tool, because such sites command a higher level of consumer trust than traditional brochure-type sites (Filieri *et al.*, 2015; Wathen and Burkel, 2002). However, the idea of using recommendations on such sites, as a reliable exercise in benchmarking, can be threatened by the rising number of trolls with their fake self-praise and promotional content, which they post with an intention to boost sales (Filieri *et al.*, 2015).

**Positioning, persuasion and the internet**

Positioning is a major challenge for any business that seeks to attract customers. It underlines the need to differentiate a product offering in the market. The long historical roots of wine with production capabilities across many regions and countries over the past centuries have fostered a proliferation of wine brands and wineries, limiting the presence of a dominant market share for any brand. It is therefore especially critical that any offering, whether aimed at attracting customers to visit a vineyard while on tour or to market wine must necessarily adopt a clear positioning. The basic idea behind positioning is based on the seminal work by two advertising practitioners Reis and Trout (1986) who, in 1986, articulated the concept in their book, entitled: *Positioning: The battle for your mind*. These authors argue that: “(But) positioning is not what you do to a product. Positioning is what you do to the mind of the prospect. That is, you position the product in the mind of the prospect” (p. 2). They also point out that: “If you didn’t get into the mind of your prospect first (personally, politically, or corporately), then you have a positioning problem.” (p. 21).

To state that nowadays the amount of commercial clutter targeted at consumers, on a daily basis is overwhelming, is an understatement and finding the proverbial window to the prospect’s mind is indeed challenging. Kilbourne (1999, p. 58) observes that “the average American is exposed to at least three thousand ads every day and will spend three years of his or her life watching television commercials”. Positioning recognises that customers are inundated with information. This is especially so in the case of wine, where saying that buyers are continuously bombarded with an avalanche of information is an understatement. The typical consumer’s mind is very much like a saturated sponge, and unless the winery and its offering stands out, it is most likely to be ignored. While wine aficionados may remember a little more, most wine drinkers remember only a fraction or much less. Reis and Trout argue that to be successful it is necessary to find a “window” into the mind of the customer and be the first to fill it. To do so requires differentiation and the identification of some unique proposition, one that offers value to customers and that can be effectively communicated to a target audience. Of course communication can take various forms and with the advent and increasing importance of the Internet and social media, the situation has only become more challenging. In this context and given that the product diversity within a wine category may be somewhat limited, positioning of the less noble wines and their respective vineyards is especially arduous. Successful positioning requires effective persuasion via the communication used.
Simons (1976, p. 21) defines persuasion as “human communication that is designed to influence others by modifying their beliefs, values, or attitudes”. Komatsu et al. (2013) describe persuasion as a non-enforcing, socially effective process or act that encourages changes in attitudes or behaviour in an individual, with their consent. There are a number of persuasion theories in the literature (e.g. Social Judgment Theory – Sherif and Hovland, (1961); Sherif et al. (1965); Elaboration likelihood Model – Petty and Cacioppo (1986), Cognitive Dissonance Theory – Festinger (1957, 1962). However, given the focus of this paper, Narrative Theory (Fisher, 1984, 1987) lends itself especially well. The theory moves away from an emphasis on rational decision-making and deductive argumentation and instead argues for the importance of the narrative as a more effective means of persuasion. Consequently, a narrative must have the logic of good reason and coherence to be convincing enough to permeate the receiver’s consciousness and translate into a change in action (Fisher, 1987).

Research focus

Within this context we set out to investigate whether and to what extent do wine tour-operating companies successfully use their websites to communicate persuasive and meaningful differences to their customers in their quest to clearly position their product offering. Specifically, we ask:

RQ1. Can lexical analysis of the website narrative pertaining to leading wine tour-operating firms identify differences across winescapes?

Research shows that reviews on social media impact travellers’ booking decisions and are therefore of utmost importance for hotels (Zhao et al., 2015) and related services. Although, there are various social media platforms, TripAdvisor has become a dominant platform. Indeed, mobile and desktop data for October 2015 revealed TripAdvisor’s dominance with double the number of visits of Expedia, the second most visited travel site (May, 2015). TripAdvisor has become an increasingly valuable reference point for many customers prior to visiting a location, be it a restaurant, winery and much more. This is clearly one of the ways by which consumers attempt to mitigate risk, particularly when their knowledge is limited or during situations that they may have never experienced or only hesitantly undertaken in the past. It can also be a useful way of reducing post-purchase dissonance. Although most people can identify the principal winescapes from around the world, we ask:

RQ2. Do TripAdvisor mean review scores for websites of leading wine tour-operating firms differ by winescapes?

A quick scan of corporate websites will immediately confirm that their contents differ markedly from each other, not only visually and aesthetically but also in terms of narrative. Therefore we ask:

RQ3. Can lexical analysis of the narrative on websites of wine-tour operators predict TripAdvisor’s mean review scores?

“Winescapes” based on regions and countries are perhaps the most widespread typology used when discussing wine. We investigate whether lexical analysis can provide an alternative typology and proceed to ask:

RQ4. Can lexical analysis of websites pertaining to different winescapes be meaningfully clustered?
Methodology
The methodology used in this study is predominantly exploratory. Text data consisting of the content in the About Us section in the websites of wine tour-operating firms were collected from each of fifty websites in five webscapes. Subsequently, lexical, regression and hierarchical clustering analyses were undertaken.

Data collection
Text data were collected from the About Us section in every one of the investigated websites. Those few sites that did not have an About Us section but had this information on their home landing pages were also included. The About Us section is generally dedicated to introduce and describe the firm to potential visitors. Nielsen and Tahir (2002) posit that the About Us section’s main objective is to give an overview of the company, together with links to relevant details about products or services offered by the company. Tan (2013) defines the About Us page as a personal description of the website to its visitors and should reveal the company’s background, present its products and services and differentiate companies from their competitors’. It should therefore reflect the desired positioning of the firm.

Graham (2013) provides more detailed guidelines and suggests that companies should establish a conversational tone that tells the story of the company in the same way it would be told to someone face-to-face, tell their business story such as motivation behind the name, motivation for starting the business and what customers should expect when buying their service or product and show personality, making use of the first person and clearly promoting the name of the company. The first point highlights the importance of the narrative in achieving persuasion while the latter two points highlight the desire to differentiate and achieve a desired positioning.

Lexical analysis
Lexical analysis, specifically DICTION v. 7 software has been successfully used by scholars to investigate the adopted narrative. DICTION has been used in political campaigns analysis and has proved to be a useful predictor of US presidential election results (Lowry and Naser, 2010). Similarly, Short and Palmer (2007) used DICTION in Strategic Management and report significant differences in word content in mission statements based on organisational characteristics. Behavioural scientists also note DICTION’s potential in the study of leadership (Bligh et al., 2004a, 2004b). Accounting researchers have used it to analyse annual reports and found a relationship to corporate profit (Wisniewski and Yekini, 2015). There is however, little evidence pertaining to the use of DICTION within a marketing context. Given that results obtained from DICTION can be used in further statistical analysis it can potentially provide researchers a means to better understand website content.

Regions chosen
The five winescapes that provide the backdrop for this study have been chosen along the following criteria:

- **France**: This is one of the top three countries with significant vineyard acreage (wineinstitute.org 2014) and the most visited country in the world (www.diplomatie.gouv.fr).
- **Napa Valley**: Although this is a region not a nation, it is a popular region destination for both international and domestic tourism. Its inclusion made it also possible to also consider whether websites pertaining to a region differ from those of a country.
Napa Valley is said to have a unique characteristic in that each winery has its own exuberant architectural style.

- **South Africa and Australia**: These two countries have been included because of their significant growth, reported at above 10 per cent in vineyard acreage from 2011 to 2014 (wineinstitute.org 2014). South Africa is also interesting because it combines African characteristics with an English speaking culture.

- **New Zealand**: Although this only accounts for 0.5 per cent of global vineyard acreage (wineinstitute.org 2014), it is included because it presents the case of a relatively small country that produces wine and promotes wine tourism.

**Selected websites**
A total of 250 websites consisting of the top fifty within each region were chosen according to their organic placing on the TripAdvisor website. The keywords ‘wine tours’ and ‘tasting’ were used to search each of the five winescapes chosen.

**Results**
Lexical analysis was undertaken using the standard procedures available in the DICTION software that can classify text and also provide scores under five broad master variables: Activity, Optimism, Certainty, Realism and Commonality. The resulting scores were used to answer the research questions proposed:

**RQ1.** Can lexical analysis of the website narrative pertaining to leading wine tour-operating firms identify differences across winescapes?

To investigate this, the scores of the five variables in DICTION were treated as dependent variables in a one-way ANOVA with the five different winescapes treated as factors. Results in Table I show that there are statistically significant differences for Activity and Realism ($F = 5.11, p < 0.01$ and $F = 7.27, p < 0.001$ respectively) and that Optimism is very close to significance too ($F = 2.32, p < 0.06$). USA websites exhibit the highest levels of Activity and France the lowest while South African websites exhibit the highest levels of Realism. On the other hand, Australian websites have the lowest scores for all five dimensions. The results suggest that DICTION is able to distinguish among the winescapes being investigated:

**RQ2.** Do TripAdvisor mean review scores for websites of leading wine tour-operating firms differ by winescape?

Mean review scores from TripAdvisor were computed from the 5-point Likert where a 5 = excellent, and 1 = terrible. Each score was multiplied by the number of replies obtained and an overall mean review score for each website was computed. To investigate the second research question the mean rating scores from TripAdvisor were treated as dependent variables in a one-way ANOVA with the different winescape countries/regions treated as factors. Results in Table II show that there are significant differences ($F = 5.67, p < 0.001$). French wines obtained the best mean review scores from customers, while US, Napa Valley, websites obtain the lowest mean rating scores:

**RQ3.** Can lexical analysis of the narrative on the websites of Wine-tour operators predict TripAdvisor’s mean review scores?
Table I. Results of ANOVA for DICTION scores by webscapes

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Table II. Results of ANOVA for TripAdvisor mean review scores by countries/regions

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</tbody>
</table>
To test the causal relationship posited by the third research question, the mean review score for each website was treated as a dependent variable in a regression, with the five DICTION variables treated as independent variables. Results show that it is only Commonality that is significant (\( R^2 = 0.03; F = 2.49, p < 0.03; \text{Std. Beta} = -0.14, t = -2.20, p < 0.03 \)). Further analysis suggests that the effect is coming from the Centrality component of Commonality (\( R^2 = 0.05; F = 3.10, p < 0.01; \text{Std. Beta} = -0.17, t = -2.74, p < 0.01 \)).

**RQ4.** Can lexical analysis of websites pertaining to different winescapes be meaningfully clustered?

Cluster analysis is a multivariate technique that classifies cases into groups that are relatively homogeneous within themselves and relatively heterogeneous between each other (Landau and Chis Ster, 2010). Hierarchical cluster analysis is a specific type of clustering that combines cases into homogeneous clusters, by merging them, one at a time, in a series of sequential steps (Blei and Lafferty, 2009). The analysis used is agglomerative and defined by the similarity or measurement of the distance between cases used and the linkages between clusters (Bratchell, 1989). Hierarchical clustering in SPSS was used on input data resulting from DICTION that consisted of a five-column table representing the master headings for each of the 250 websites considered. No transformations were necessary as the data resulting from DICTION consist of z-score values. Given the nature of the data collected, the similarity measure adopted was Squared Euclidean distance. The choice of similarity measure is reported to have less effect on clustering outcomes than the choice of linkage rule (Myers, 1996). In terms of linkage, a number of alternative approaches are possible but average linkage is a natural compromise between single and complete linkage, and is therefore one of the most commonly used techniques. This technique averages all distance values between pairs of cases, coming from different clusters.

The resulting proximity matrix consisting of squared Euclidean distance calculated between all cases, indicates those cases with lower scores that are first to be joined together while the agglomeration schedule shows how the hierarchical table progresses. An inspection of the agglomeration table shows a sharp increase in coefficients from 65.64 to 73.96 after stage 222. A scree plot of mean coefficients as the vertical axis with Stages along the horizontal axis is obtained from the agglomeration schedule and shown in Figure 1. Fitting a straight line on the Scree side of the plot and observing where this exits, suggests that the Scree plot turns sharply upwards after stage 221 in the agglomeration process – Figure 1.

The dendrogram provides a visual display of the clustering process. Results portrayed in the dendrogram, together with those from the agglomeration schedule, indicate a cut-off point that provides a six-cluster solution. Details of the resulting six clusters together with their respective mean scores from TripAdvisor, are provided in Table III. These results suggest that lexical analysis of websites of wine-tour operators operating in different winescapes can be meaningfully clustered.

**Key findings**

This study examined the differences in lexical tone used by different websites, in different regions. It is evident that lexical tone differs by region. Findings show that of the five standard DICTION variables, activity and realism do exhibit differences across different winescapes while optimism is very close to being significant. French websites exhibit highest scores on Optimism and lowest on Activity, suggesting a certain level of Déjà vu, probably resulting from a large wine market and a reliance on the recognised glory of French wines. Australian websites rank lowest on Realism and Optimism and the second
### Table III.
Means and standard deviations for DICTION variables and *TripAdvisor* scores by cluster

<table>
<thead>
<tr>
<th>Cluster</th>
<th>N</th>
<th>Activity</th>
<th>Optimism</th>
<th>Certainty</th>
<th>Realism</th>
<th>Commonality</th>
<th><em>TripAdvisor</em> scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>207</td>
<td>48.88</td>
<td>54.39</td>
<td>47.90</td>
<td>49.55</td>
<td>49.52</td>
<td>4.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.29</td>
<td>2.93</td>
<td>3.86</td>
<td>3.37</td>
<td>3.07</td>
<td>0.29</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>41.80</td>
<td>60.47</td>
<td>44.16</td>
<td>44.25</td>
<td>45.12</td>
<td>4.76</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.02</td>
<td>2.67</td>
<td>3.19</td>
<td>2.89</td>
<td>4.01</td>
<td>0.24</td>
</tr>
<tr>
<td>3</td>
<td>30</td>
<td>48.50</td>
<td>51.41</td>
<td>44.00</td>
<td>38.78</td>
<td>49.68</td>
<td>4.69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.44</td>
<td>1.51</td>
<td>2.96</td>
<td>4.01</td>
<td>1.08</td>
<td>0.22</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>26.01</td>
<td>56.93</td>
<td>53.16</td>
<td>43.49</td>
<td>47.30</td>
<td>4.94</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>47.03</td>
<td>61.19</td>
<td>71.60</td>
<td>76.49</td>
<td>48.24</td>
<td>4.95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.45</td>
<td>0.30</td>
<td>4.76</td>
<td>0.11</td>
<td>0.44</td>
<td>0.03</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>52.28</td>
<td>57.85</td>
<td>57.43</td>
<td>64.68</td>
<td>48.33</td>
<td>4.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.02</td>
<td>4.28</td>
<td>0.96</td>
<td>5.22</td>
<td>0.01</td>
<td>0.06</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td>48.53</td>
<td>54.32</td>
<td>47.60</td>
<td>48.40</td>
<td>49.37</td>
<td>4.67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.08</td>
<td>3.24</td>
<td>4.61</td>
<td>5.74</td>
<td>3.01</td>
<td>0.28</td>
</tr>
</tbody>
</table>
lowest on Activity, suggesting a certain level of complacency. Results for Napa Valley region show the highest score for activity, the second highest level of optimism, but rank mid-way in terms of realism, suggesting dynamism among wine tour-operating firms, that may not be sufficiently tempered by reality. South African websites exhibit strong realism and average scores for activity and optimism, while New Zealand websites rank above average, on all three variables, but do not outshine other regions, on any variable.

High scores on any statistically significant DICTION variable suggest clarity in positioning. While these scores may in part be driven by different geographical and cultural differences, findings reported in this study indicate that despite growing markets, New Zealand and Australian websites are not successfully communicating a strong positioning, while US, South African and French websites appear to exhibit a distinct emphasis.

This research also considers the mean scores provided on TripAdvisor. Results show that French wine tour-operating firms have the highest mean scores, followed by Australian firms, while American firms have the lowest scores. The high scores for the French wine tour-operating firms are not surprising, given the standing of French wines. On the other hand, low scores for American Napa Valley wine tour-operating firms are interesting. However, it would be presumptuous to attribute this to an inferior service in Napa Valley. Unlike other regions, Napa Valley wine tour-operating firms tend to attract many domestic out-of-state US customers, who provide most reviews. The lower mean scores reported cannot be attributed to the service provided, as this would warrant a more detailed investigation of the participation of US customers on similar social media websites, in other regions.

Results of the regression linking all five DICTION variables to the mean scores on TripAdvisor show that it is the commonality variable, or more specifically its Centrality component, that has a negative effect on the mean score that customers provide on TripAdvisor. The other four DICTION variables were not found to be significant. The DICTION help manual (p. 9) refers to Centrality as “terms denoting institutional regularities and/or substantive agreement on core values”. Poor scores on this aspect of website content signify a direct negative effect on the scores, (and possibly also comments) that visitors will provide on TripAdvisor. Results suggest that websites of wine-tour operators should seek lexical terms that provide differentiation and distinctiveness if they wish to achieve more favourable scores on TripAdvisor.

Hierarchical clustering analysis provided a six-cluster solution where 207 of the 250 cases, or 82.8 per cent of all websites, form a single cluster. Inspection of these websites indicates that these are providing little or very incomplete information and are therefore not in conformity with good practice for About Us sections, as discussed earlier (Graham, 2013; Nielsen and Tahir (2002; Tan, 2013). They just either briefly narrate their company’s history or just describe their service. Their scores on the five DICTION variables are all close to the mean, with no dominant variable. At 4.68 (sd 0.29) they also have the lowest TripAdvisor mean scores. Cluster 3, consisting of 30 websites, differs from Cluster 1 on the Realism variable, which is especially low, suggesting that these websites may be too hyped-up. On the other hand, Cluster 2, which consists of 8 websites, has below-average scores on all DICTION variables except for Optimism, which is the second highest. Clusters 3 and 2 have the second and third lowest TripAdvisor mean scores, respectively.

Conclusions and implications
Those websites that have detailed information for the About Us sections, as suggested by Graham (2013), specifically information pertaining to companies’ background, their story and information about their products, do cluster differently. Indeed, these attributes are
found in two Australian websites that make up Clusters 5 and 6. Cluster 5 has the highest scores on realism, certainty and optimism, while Cluster 6 has the second highest score for realism and certainty and the highest score for activity. These two clusters provide most detail in their websites. At 4.95 (sd. 0.03) and 4.80 (sd. 0.06), Clusters 5 and 6 have the highest and third highest TripAdvisor mean scores, respectively. Cluster 4 consists of a single firm that uses a distinctive imperative form of writing. This website obtained the second highest mean review score on TripAdvisor at 4.94. These results provide a clear link between the ability of the firm to clearly position itself using the DICTION variables and TripAdvisor mean score results. Cluster 5 has the highest scores on DICTION variables of realism, certainty and optimism, and obtains the highest mean TripAdvisor scores. The large Cluster 1 that exhibits no real differentiation with average scores for all the DICTION variables obtains the lowest mean TripAdvisor scores.

The analysis has revealed that, with a few exceptions, there are low levels of differentiation in the narrative of websites. Such results highlight the importance of paying more attention in the development of website content and specifically to the narrative that they provide. This suggests that marketing managers need to devote attention to this type of communication, as an important means to position their offering on the market. Unfortunately, the importance of content writing is often ignored or subcontracted to technical people. There is seldom enough appreciation of the critical role that both syntax and semantics can play in facilitating the use of a firm’s website, specifically in terms of clear positioning.

Our research highlights the importance of the text content used in websites. Narrative theory provides a useful framework to marketers seeking persuasion among readers and ultimately customers. Fisher (1987) argues that what sets humans apart is our ability to narrate stories. He further emphasises the importance of narration that involves the use of symbolic words and actions, to which readers can also relate. To do so he makes use of the Greek term mythos, which he describes as “ideas that cannot be verified or provided in any absolute way. Such ideas arise in metaphor, values, gestures and so on” (p. 19). Therefore, it is arguably more effective to pursue a narrative approach, where meaning and emotions can be associated, rather than attempt to persuade others by leveraging an assumed rational decision-making process. However, any narrative needs to be credible and represent good sense and coherence. It also needs to be appropriate for the target group in that it ‘fits in’ with a person’s culture, character, values and experiences.

Limitations and directions for future research
The research has a number of limitations. First, the methodology pursued is mostly exploratory and qualitative, relying mainly on lexical analysis. However, as DICTION uses a standardised technique it allows for meaningful comparisons across different countries. However, although the software does allow for other variables to be created, it can be argued that DICTION may be too restrictive. In this context, it may be useful to consider the use of other lexical analysis software tools such as Leximancer, which could provide a broader and richer understanding of text. Of course, besides text, many websites make use of videos to visually present their product to potential customers. This perspective was not taken into consideration in this study. Future research could also consider this feature by investigating whether video clips and pictures may be more effective than detailed text, which is synonymous with what has become a mandated in the About Us section on websites. Moreover, TripAdvisor has become a powerful social media tool that can provide testimonials from other customers. A TripAdvisor link to the wine tour-operating firms’ websites, provides these operators with the opportunity to
write a short feature about the services they offer. Do customers prefer this form of information provided by TripAdvisor? Is this a more efficient way of positioning the wine-tour operators? How satisfied are potential visitors with this form of website? Is there a particular pattern of how potential customers go about undertaking a search? A better understanding of some of these issues would go a long way in helping wine tour-operating firms to better position their offer.

Second, the lower scores for the Napa experiences are interesting but clearly require further analysis that could include comparisons across regions. There may be other reasons accounting for the lower scores. For example, could it be because they try to do too much? Is it because of the significant emphasis on unique architectural elements of the Napa valley vineyards? Or is it really simply because these vineyards tend to attract a higher percentage of more demanding US visitors, many of whom have higher experience expectations? Additional research on these aspects would be useful.

Third, the sample in this study was limited to 50 websites in five regions or countries. The choice followed a logical process, but in making our choice, other possibilities were inevitably omitted. Future research could look at other wine regions and nations, particularly Italy and its regions, which represent a considerable percentage of worldwide production of wine. In addition, data were collected exclusively from their respective About Us sections. A broader data collection may, in fact, prove useful.

Finally, the outcome variable used in the regression analysis, consisting of the mean scores on TripAdvisor, is a single item measure. What TripAdvisor is actually capturing is not precisely defined by TripAdvisor itself, but it appears safe to assume that it is the satisfaction dimension of the overall experience of a particular wine tour that is being assessed. Future research could look at the possibility of collecting other potential outcome variables, for example, the output of the vineyard in litres and whether it is family owned or not.

References


Further reading


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Advertising efficiency in the Spanish beer industry: spending too much?

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Abstract
Purpose – The purpose of this paper is to estimate advertising efficiency in the Spanish beer industry and to analyse the effects of several environmental variables and brand portfolio scope on advertising efficiency scores.
Design/methodology/approach – A two-stage double bootstrap procedure is used. In the first stage, advertising efficiency is estimated using a bootstrapped data envelopment analysis on a multiple input-output model of advertising. In the second stage, a bootstrapped truncated regression model is estimated to identify the determinants of advertising efficiency. Both stages are estimated simultaneously. The empirical application is carried out on a sample of Spanish brewers between 2007 and 2014.
Findings – Results show low advertising efficiency scores and highlight the effects that environment and brand portfolio scope have on these estimates.
Originality/values – For the first time, this paper analyses the effect of environmental variables and the brand portfolio scope on advertising efficiency in the beer industry.
Keywords Benchmarking, Advertising, Spain, Econometric model, Brands, Brewing
Paper type Research paper

1. Introduction
Firms annually spend a huge amount of money to implement their marketing strategy. However, little guidance is available to forms regarding the relative efficiency of their marketing expenditures (Ataman et al., 2010).

From a budget perspective, the biggest part of marketing expenditures is usually devoted to advertising and promotion (Ambler, 2000). Therefore, the assessment of advertising spending results is a critical component of the advertising strategy in any type of organization. Further, the increasing media space/time costs and the link between advertising and firm performance have led marketers to focus on the assessment of advertising spending (Ambler, 2000; Sheth and Sisodia, 2002; Cheong et al., 2014).

Particularly, an understanding of advertising effectiveness would contribute significantly to the productivity of advertisers in terms of the effective allocation of their marketing budgets. Furthermore, it would also contribute significantly to advertising agencies in terms of measuring objectively the effectiveness of the primary service they provide (Bendixen, 1993). In this sense, there is a substantial volume of past research on advertising focused on advertising effectiveness (Kim et al., 2001). Although it is a critical issue, we must go beyond it and investigate the concept of advertising productivity (Kim et al., 2001). Recently, advertising efficiency has emerged as a strategic concept that aims to estimate the goodness of the decisions undertaken in the field of advertising spending.

Broadly speaking, advertising efficiency can be estimated as the ratio between the output of the advertising process (in terms of profits, sales, or the number of target audience
reached) and the cost of the advertising investment. This approach was applied in early research on assessing advertising performance, which was mainly focused on the estimation of the return on advertising investment and on the advertising cost/sales ratio (Assmus et al., 1984; Smith and Park, 1992). In an attempt to improve the evaluation of advertising spending, some researchers have argued that competition should be taken into account when evaluating advertising efficiency as firms do not make decisions in a vacuum (Fare et al., 2004; Lohtia et al., 2007). In fact, Rust et al. (2004) argue that firm performance is fundamentally affected by competition, and it is necessary to capture it when evaluating marketing productivity.

As an alternative, relative advertising efficiency is a new approach to estimate advertising performance which considers a firm relative to the best performers rather than the average performers as the traditional absolute measures. Following this latter approach, there is an increasing use of data envelopment analysis (DEA) (a non-parametric technique to estimate efficiency) to specifically analyse advertising efficiency (Luo and Donthu, 2001; Fare et al., 2004; Büschken, 2007; Pergelova et al., 2010). However, the number of papers analysing the drivers of advertising efficiency is scarce.

In this paper, we also focus on branding literature, which holds that brand value improves company productivity by reducing marketing costs and improving margins (Keller and Lehmann, 2003; Rust et al., 2004).

Specifically, we analyse the relationship between brand portfolio scope and advertising efficiency. Advertising effectiveness and branding papers have been active in the field of firms’ brand extensions into new product areas, which act as an umbrella for several brands belonging to the same firm (Smith and Park, 1992; Nijssen, 1999). These papers find that brand extensions increase advertising productivity measured in terms of the advertising cost–sales ratio. Furthermore, Morgan and Rego (2009) analyse the relationship between several brand portfolio characteristics and marketing efficiency (ratio of advertising spending to sales), showing that a firm’s brand portfolio strategy explains marketing performance. This paper contributes to this stream of research by analysing the relationship between advertising efficiency and brand portfolio scope.

Otherwise, it is well recognized that efficiency estimates which do not account for the operational environment have only a limited value. In fact, the ability of a firm to transform inputs into outputs is influenced not only by its efficiency but also by the external operating environment (Fried et al., 1999). In this context, the term “environment” is used to describe factors which could influence the efficiency of a firm, where such factors are not traditional inputs and are assumed to be not under the control of the manager. Therefore, if the firms in a given sample are influenced by this environment the efficiency analysis should take into account this heterogeneity. Although the literature has proposed several approaches to incorporate the exogenous environment in efficiency analysis, none of these techniques have been applied in the field of advertising efficiency. This paper tries to fill this gap by considering the impact of several environmental variables related to where the firms develop their activities to obtain accurate efficiency estimations.

To summarize, the main contributions of this paper are:

- to extend the stream of research aimed at examining advertising efficiency; and
- to test the effect of environmental variables and brand portfolio scope on this efficiency.

To reach these goals, the methodology used comprises a two-stage double bootstrap efficiency analysis (Simar and Wilson, 2007). In the first stage, advertising efficiency is estimated using a bootstrapped DEA on a multiple input-output model of advertising. In the
second stage, a bootstrapped truncated regression model is estimated to identify the determinants of advertising efficiency. Both stages are estimated simultaneously. The empirical application has been carried out using data from the largest firms operating in the Spanish beer industry between 2007 and 2014. This industry represents an interesting case study because it is an intensive advertising spending sector and a key economic activity within the agribusiness sector, being one of the main drivers of the national economy (Calvo-Porral and Levy-Mangin, 2015). In addition, it also faces the challenge of the craft brewing industry, which has experienced major growth in most Western countries where craft breweries compete now with larger beer companies (Duarte-Alonso et al., 2017).

The rest of the paper is structured as follows. Section 2 reviews the previous literature on this topic. Section 3 presents the research methodology, the data and the variables used. In Section 4, the empirical results are reported and, finally, Section 5 presents the main conclusions, implications and limitations of the paper.

2. Literature review

2.1 Advertising efficiency

In the past two decades, media spending patterns and advertising formats have changed dramatically (Dahlen and Rosengren, 2016). Simultaneously, there has been a growing demand to demonstrate the returns of advertising spending. Some of the early studies on this topic consider the returns on advertising investment approach to estimate advertising efficiency, measuring it by the advertising cost/sales ratio (Smith and Park, 1992). Under this view, companies evaluate their productivity by comparing themselves to similar companies (benchmarking) to learn from the best-performing organizations (Donthu et al., 2005).

Recently, DEA, a non-parametric technique to estimate efficiency, has been increasingly used to estimate advertising efficiency (Luo and Donthu, 2001, 2005; Büschken, 2007; Cheong et al., 2014). Table I summarizes previous research on advertising efficiency. Given the different inputs and outputs used, the different nature of industries and countries considered, and the different periods analysed, direct comparison of results among previous studies is challenging. However, it is worth noting that most of them show high levels of advertising inefficiency among firms. Thus, there is a growing need to understand and identify the drivers that affect advertising efficiency. The present study adds to this literature and examines to what extent the brand portfolio scope and the environment influences advertising efficiency.

2.2 Brand portfolio strategy and advertising efficiency

Brand literature maintains a certain consensus around the idea that the value of a brand improves the efficiency of the company by reducing marketing costs and improving prices and margins (Keller and Lehmann, 2003, 2006; Fernández-Barcala and González-Díaz, 2006; Smith and Park, 1992). Two reasons could explain this relationship. First, a very reputable brand virtually guarantees success with lower investment (Aaker, 1991; Keller, 2002). On the one hand, due to the fact that better differentiated brands can develop more efficient marketing programmes because their customers are more sensitive to advertising and promotion (Rust et al., 2004). On the other hand, brands help consumers to interpret and to process the information on the product, and they influence consumer confidence when making the purchase decision. According to the signalling theory (Erdem and Swait, 1998), a brand represents the classic signal of quality used in many markets to guarantee the quality of a company. Consequently, knowledge of a brand created in consumers’ minds through a
<table>
<thead>
<tr>
<th>Authors</th>
<th>Sample</th>
<th>Technique</th>
<th>Inputs</th>
<th>Outputs</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luo and Donthu</td>
<td>63 US advertisers in 1997 and 1998</td>
<td>DEA</td>
<td>3 inputs (expenditure): print, broadcast, and outdoors</td>
<td>2 outputs: sales, operating income</td>
<td>33 firms had advertising efficiency levels below 20%</td>
</tr>
<tr>
<td></td>
<td>23 outdoor campaigns</td>
<td></td>
<td>4 inputs (Concepts, Words, colour, graphics)</td>
<td>2 outputs: recall, evaluation</td>
<td>6 campaigns were efficient.</td>
</tr>
<tr>
<td>Fare et al.</td>
<td>6 US beer firms from 1983 to 1993</td>
<td>DEA cost model</td>
<td>3 inputs (expenditure): print, television, and radio</td>
<td>1 output: sales (millions of barrels)</td>
<td>Average efficiency 70%</td>
</tr>
<tr>
<td>Luo and Donthu</td>
<td>Top 100 US advertisers in 1997 and 1998</td>
<td>DEA and Stochastic Frontier</td>
<td>3 inputs (expenditure): print (Magazine and Newspaper), broadcast (Spot TV, Cable TV Networks, Network Radio, and National Spot Radio) and outdoors</td>
<td>1 output: sales revenue</td>
<td>Low-cost efficiency levels</td>
</tr>
<tr>
<td>Büschken</td>
<td>35 car brands operating in Germany between 1998 and 2001</td>
<td>DEA</td>
<td>5 inputs (expenditure): television, radio, outdoor, magazine and newspaper</td>
<td>4 outputs: brand familiarity, sympathy, brand consideration, and brand purchase intention</td>
<td>High levels of inefficiency. Firms could bring in 20% more sales</td>
</tr>
<tr>
<td>Lohtia et al.</td>
<td>37 banner advertisements</td>
<td>DEA</td>
<td>6 inputs (coded by five independent judges): incentives, emotional appeals, colour, interactivity, animation, message length</td>
<td>3 outputs: click-through-rate (CTR), attitude towards the ad, recall</td>
<td>13 firms are efficient. 8% of a brand’s advertising budget wasted. Advertising spending efficiency increases as size of an organization’s product portfolio expands</td>
</tr>
<tr>
<td>Pergelova et al.</td>
<td>18 car firms operating in Spain from 2001 to 2007</td>
<td>Bootstrap bias-corrected DEA and truncated regression</td>
<td>4 inputs (expenditure): print, broadcast internet, outdoor</td>
<td>2 outputs: sales revenue (income), number of cars sold</td>
<td>Online advertising improves the efficiency</td>
</tr>
<tr>
<td>Brown and Cheong</td>
<td>26 companies in 2009</td>
<td>DEA</td>
<td>8 inputs (expenditures): Sports media spending, non-sports media spending, magazines, national spot radio, network television, cable television, spot television</td>
<td>2 outputs: gross profits and brand value</td>
<td>Half of the companies were inefficient. 20% overspending</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Authors</th>
<th>Sample</th>
<th>Technique</th>
<th>Inputs</th>
<th>Outputs</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kim et al. (2013)</td>
<td>Super Bowl advertisers from 2005 to 2010</td>
<td>DEA</td>
<td>4 inputs: Advertising expenditure, frequency, total ad length, number of brands promoted</td>
<td>2 outputs: AdMeter rating and Nielsen viewership scores</td>
<td>Advertising efficiency is positively associated with abnormal stock returns</td>
</tr>
<tr>
<td>Cheong et al. (2014)</td>
<td>100 top US advertisers from 1985 to 2012</td>
<td>DEA</td>
<td>6 inputs (expenditure): magazines, newspapers, TV, radio, outdoor, internet</td>
<td>1 output (income): total sales</td>
<td>Overall increase in inefficiency over time. 61% of top advertisers are inefficient. 34% overspending</td>
</tr>
</tbody>
</table>
company’s investment in pre-marketing programmes is a very valuable asset to improve marketing productivity (Rust et al., 2004).

This paper focuses on one of the key aspects of the brand portfolio strategy: the scope of the portfolio, which considers the number of brands the firm owns and markets.

Some pioneer studies, such as Smith and Park (1992) and Collins-Dodd and Louviere (1999), examine the empirical relationship between the efficiency of advertising and the brand extensions strategy into new product areas. They assume that brand extensions increase the efficiency of a company’s investment in marketing communications by generating a greater level of sales from a given advertising investment or by achieving a target level of sales with less investment than would be needed if the same products were launched with a new brand name (Aaker, 1990; Andersson, 2002).

Further, theoretical developments derived from the agency perspective would allow us to understand the effect of brand knowledge on advertising efficiency. The signalling theory refers to the role of brand reputation as a quality indicator that reduces the perception of risk in conditions of asymmetric information on quality in the market (Erdem and Swait, 1998). Basically, this theory assumes the existence of imperfect and asymmetric information in markets. When these information asymmetries refer to quality, high- and low-quality products can co-exist in the market (Akerlof, 1970), which means that consumers have to make ex-ante evaluations of the quality of the products they are considering. This makes choice a problematic and costly exercise, as the consumers have doubts over product quality and do not know a priori which product they are going to buy. Thus, we can expect them to try to make good purchases and to reduce risk, which means that the purchase decision process will be based on all the intrinsic and/or extrinsic signals that reveal the quality of the product.

One of the most analysed signals to reduce these asymmetries in the consumer markets is brand reputation. This argument is coherent with marketing literature, where the value of a brand is defined by the utility it provides to the consumer as an information signal, so the main determinant of brand value would be the credibility that consumers assign to it, which could contribute to the improvement of the product’s quality perception and to reduce both the search costs and the risk associated with purchasing the product.

Several researchers argue that companies develop reputational capital through individual brand names, to address the information asymmetry between producer and consumer (Fernández-Barcala and González-Díaz, 2006). Thus, in the case of an experience good, in which quality cannot be discerned prior to purchase (McQuade et al., 2012), and especially for experience products, producers repeatedly supply the promised quality to show that they are not exploiting their information advantage in terms of the actual quality. Thus, producers create an individual reputation for their brand names that will be used as a guarantee for future consumers.

Our interest in testing the relationship between brand knowledge and advertising efficiency arises from its important implications for managers’ decisions regarding the effectiveness of brands in creating added value for companies and, thus, on whether to use different brands (expanding the length of the portfolio) or whether to use few brands in favour of independent promotion of the familiar individual brand. As stated by Morgan and Rego (2009) owning a larger number of brands enables a firm to attract and retain the best brand managers, to build a greater market share, to enjoy greater power and to deter new market entrants. However, larger brand portfolios might be inefficient because they lower manufacturing and distribution economies, and dilute marketing expenditures. Moreover, they are a potential cause of weakened brand loyalty, and they increased price competition, suggesting more potential cost associated with larger brand portfolios.
3. Methodology, sample and variables

3.1 Methodology

In this paper, the two-stage double bootstrap methodology proposed by Simar and Wilson (2007) is used. This methodology is based on the non-parametric technique of DEA to estimate efficiency. Further, it considers regression analysis to estimate the effect of environmental variables on efficiency. Besides, both steps are estimated simultaneously.

DEA was first developed by Charnes et al. (1978, 1981) based on linear programming techniques. The underlying idea of DEA is to identify a firm as efficient when no other firm is capable of producing a higher output from the same level of input (output-oriented model) or, alternatively, of producing the same output using a lower level of input (input-oriented model). Thus, to evaluate efficiency every firm is directly compared against a peer or combination of peers. The underlying assumption is that each firm uses the same set of inputs to produce the same set of outputs, but the inputs are consumed and outputs are produced in various amounts.

In this paper, an input-oriented model is used because the firms involved are subject to market demand and the inputs are under the control of the firms. Although beer firms try to maximize their revenues, the volume of beer sold in the Spanish market is steady at around 35.5-million hectolitres over the past 10 years (Cerveceros, 2015), acting as an important constraint for beer firms. In any case, it should be stressed that both model orientations identify the same efficient breweries.

DEA considers the existence of \( n \) firms (in the jargon of DEA known as decision-making units (DMU\( _i \); \( i = 1, \ldots, n \)) which employ a vector of \( m \) inputs \( X_i = (x_{1i}, x_{2i}, \ldots, x_{mi}) \) to obtain a vector of \( s \) outputs \( Y_i = (y_{1i}, y_{2i}, \ldots, y_{si}) \). For each DMU, the following linear programming model (Banker et al., 1984) must be solved:

\[
\begin{align*}
\max & \quad z_0 = \delta + \varepsilon \sum_{r=1}^{s} s^+_r + \varepsilon \sum_{j=1}^{m} s^-_j \\
\text{s.t.} & \quad \sum_{i=1}^{n} x_{ij} \lambda_i + s^-_j = x_{r0} \\
& \quad \sum_{i=1}^{n} y_{ij} \lambda_i - s^+_r = \delta y_{r0}; \quad \sum_{i=1}^{n} \lambda_i = 1; \quad \lambda_i, s^+_r, s^-_j \geq 0
\end{align*}
\]

where \( i = 1, \ldots, n; r = 1, \ldots, s; \) and \( j = 1, \ldots, m \). \( \hat{\delta}_i \) is the Farrell’s efficiency estimate obtained for the DMU analysed. A DMU is considered efficient if \( \hat{\delta}_i = 1 \) and all the slacks are zero. If \( \hat{\delta}_i < 1 \), then the DMU is inefficient. The lower the index, the lower the efficiency. Thus, we use Farrell’s (1957) definition of efficiency, as the efficiency score is estimated by the radial distance. The above model assumes variable returns to scale (VRS). When eliminating the restriction of convexity, we obtain the constant returns to scale (CRS) model. Under VRS models, changes in outputs are not necessarily proportional to the changes in inputs; therefore, the VRS model is more flexible as the CRS model is a special case of the VRS model.

One of the main disadvantages of this DEA model is its deterministic nature. The measurement of input and output values is subject to errors and noise. As DEA is an extreme point technique, noise (even symmetrical noise with zero mean) such as measurement error can cause bias, as the frontier is very sensitive to these errors. Further, the noise in data usually leads to mistakes in production frontier specification and efficiency scores. To overcome this limitation, the bias-corrected DEA approach is used in this paper. Simar and Wilson (1998, 2000a, 2000b) use a bootstrap approach to develop a consistent estimator of the unknown data generating process.
To examine the determinants of efficiency estimates, a second-stage truncated regression model is estimated. From the efficiency DEA estimates ($\hat{d}_i$), a regression model, which considers these estimates as the dependent variable and a set of $Z_i$ variables as independent variables, is estimated:

$$\hat{d}_i = f(Z_i, \beta_i) + \epsilon_i$$

(2)

where $\epsilon_i$ is a random variable distributed $N(0, \sigma_i)$. The estimation of the parameters $\beta_i$ might allow us to identify the effect of the $Z_i$ variables on efficiency. However, as the efficiency estimates in the first stage (dependent variable) are built from all the data set, this estimation could be biased as the DEA efficiency scores are correlated (Simar and Wilson, 2011). Thus, the two-stage double bootstrap methodology proposed by Simar and Wilson (2007) is used (Algorithm 2, p. 42). In this methodology, both stages (efficiency estimation and effect of environment) are estimated simultaneously, avoiding the problems that might arise with the separate estimation of the two steps.

One important remaining question is how environmental variables might affect the production process. In the model presented by Simar and Wilson (2007), environmental variables affect the shape (i.e. mean, variance, etc.) of the distribution of inefficiencies, but not the support of input or output variables. However, environmental variables might affect the production possibilities themselves. In this sense, Simar and Wilson (2007) model rationalizes second-stage regression of efficiency estimates on some environmental variables, but does not allow for the possibility that environmental variables might affect the production possibilities. If they do, then a different model is needed, and second-stage regression is not appropriate. In this sense, the Daraio et al. (2015) proposal is used to test separability. The sample is randomly split into two independent parts, and two independent statistics are computed to test the null hypothesis of separability. Following this one-sided test, the hypothesis of separability is rejected when the difference between them is “too big”.

To implement the methodology the rDEA library (Simm and Besstremyannaya, 2016), which is based on the statistical package R, is used. In this package, efficiency is measured in terms of Shephard’s (1970) distance function, which is the reciprocal of Farrell’s measure. In this case, Shephard’s estimates range from one to infinity. However, results can be transformed into Farrell’s distance measure in a straightforward manner.

Finally, the number of bootstrap replications to compute the bias-corrected efficiency scores is set to 100, while the number of bootstrap replications to compute the confidence intervals is set to 2000. Confidence intervals are estimated at 95 per cent.

3.2 Sample and variables

The empirical analysis is performed on a sample of companies operating in the Spanish beer sector between 2007 and 2014. This experience goods industry has been chosen as an interesting case study because it is an intensive advertising spending sector. Furthermore, the beer industry in Spain is a key economic sector and activity within the agribusiness sector, being one of the main drivers of the national economy (Calvo-Porral and Levy-Mangin, 2015). For the sample selection, we use the population of brewing companies registered in paragraph 1105 of CNAE-2009 (“Fabricación de cerveza”), which is the equivalent of code 2082 of the US SIC classification (“Malt beverages”). The final sample used for the empirical study is made up of 6 beer firms continuously operating from 2007 to 2014 (8 years). Data a computed on a quarterly basis (a total of 192 observations). The six firms included in the sample are Mahou-San Miguel, Heineken España, Grupo Damm, Hijos De Rivera, Compañía Cervecería de Canarias and La Zaragozana, which are the main beer
brewing companies in Spain. Despite the small number of firms included in the sample size, the final sample represents 99.7 per cent of the total beer sales in the Spanish market in 2014. Moreover, it comprises all the firms that continually invested in advertising during the whole period, with a total of over 1,671 million euros invested on advertising.

In this paper, two different model specifications are considered (Table II). In the first model (Model 1), four advertising inputs are included: Print (newspapers + magazines + Sunday supplements); Broadcast (TV + cinema + radio); Internet; and Outdoor. Data on advertising are obtained from the INFOADEX (Information for Advertising Expenditures) database, which provides detailed information on advertising expenditures in Spanish media. All the variables are expressed in monetary units. In the second model (Model 2), two additional inputs are included:

1. labour (number of full time employees); and
2. capital (plants + equipment), measured in millions of euros.

Data on these latter variables are obtained from the SABI database (the Iberian version of the Bureau Van Dijk database).

Regarding the outputs, the same two variables are considered in both models:

1. Total sales revenue, measured in millions of euros; and
2. Total beer sales, measured in millions of litres and obtained from “Cerveceros de España” (The Brewers of Spain), which is the association that since 1922 represents practically the whole of the beer production in Spain.

To explain advertising efficiency, we consider the following variables.

First, three environmental variables related to the market:

1. Number of tourists arriving in Spain (measured in millions of people and obtained from the Frontur database (http://estadisticas.tourspan.org);
2. Average quarterly temperature (measured in degrees Celsius and obtained from Aemet (www.aemet.es), the Spanish national meteorological agency; and

These three variables are widely reported by Cerveceros’ annual reports as the main variables that could affect the seasonality of beer sales. Although these variables affect all six firms in the same way, their inclusion allows us to find out whether brewers are efficient

<table>
<thead>
<tr>
<th>Model</th>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>Outdoor, Print, Broadcast, Internet</td>
<td>Beer sales (euros), Beer sales (Hl)</td>
</tr>
<tr>
<td>Model 2</td>
<td>Outdoor, Print, Broadcast, Internet, Employees, Capital</td>
<td>Beer sales (euros), Beer sales (Hl)</td>
</tr>
</tbody>
</table>

Table II.
Estimated models
because of clever management or they are efficient because they benefit from a positive environment. In fact, these variables might affect the ability of brewers to transform their inputs into outputs. If we did not include these variables brewers might appear as “efficient” when there are simply benefiting from a positive environment (derived from the effect of these variables on beer sales).

Second, two company characteristics:

1. brand portfolio scope, measured through the number of brands included in the firm’s brand portfolio, which is obtained from the companies’ annual reports; and
2. a dummy variable that takes the value 1 if the firm has invested in the Internet in the quarter and 0 otherwise.

As this is a relatively new input, not all the firms invested in the internet throughout the whole time period. Furthermore, the amount of investment in the internet is lower than the amount invested in other media. Thus, this dummy variable acts as a control variable.

Third, given the panel data nature of the data, firm specific dummy variables and quarterly dummy variables are also included to capture specific firm effects and seasonality.

All the monetary variables are deflated by the GDP deflator index (2007-2014) and converted into constant 2014 monetary units. Descriptive statistics and correlations between the variables are presented in Table II and Table III, respectively (Table IV).

4. Results
Advertising efficiency is estimated using two different models. Model 1 considers only inputs related to the advertising activity of the brewer, while Model 2 considers two inputs related to the traditional production process. In addition, each specification is estimated through the traditional input-oriented DEA model with VRS (hereafter called DEA model), and through the bias-corrected DEA model (hereafter called BC model).

The results obtained (Table V) show that the average advertising efficiency for the companies considered between 2007 and 2014 varies between 0.471 (DEA model) and 0.343 (BC model) in Model 1, which reflects a high degree of inefficiency. These values imply that, on average, the companies could have obtained the same levels of outputs using 52.9 per cent lower resources under the DEA model or, alternatively, using 65.7 per cent lower resources under the BC model. This advertising inefficiency represents a potential saving between 884 and 1,097 million euros for the whole period. Although efficiency scores estimated under the BC model are lower than the efficiency scores estimated under the

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beer sales (million euros)</td>
<td>145.29</td>
<td>123.18</td>
<td>396</td>
<td>10</td>
</tr>
<tr>
<td>Beer sales (1000s Hl)</td>
<td>1,391.96</td>
<td>1,253.76</td>
<td>3,853</td>
<td>104</td>
</tr>
<tr>
<td>Outdoor advertising (1000s euros)</td>
<td>460.49</td>
<td>767.47</td>
<td>3,875</td>
<td>1</td>
</tr>
<tr>
<td>Print advertising (1000s euros)</td>
<td>416.18</td>
<td>540.54</td>
<td>2,413</td>
<td>0</td>
</tr>
<tr>
<td>Broadcast advertising (1000s euros)</td>
<td>9,004.08</td>
<td>12,468.45</td>
<td>57,754.58</td>
<td>5.14</td>
</tr>
<tr>
<td>Internet advertising (1000s euros)</td>
<td>33.12</td>
<td>75.25</td>
<td>497.31</td>
<td>0</td>
</tr>
<tr>
<td>Employees (number)</td>
<td>262.69</td>
<td>203.64</td>
<td>771</td>
<td>19</td>
</tr>
<tr>
<td>Capital (Plants+ Equipment) (million euros)</td>
<td>99.22</td>
<td>82.43</td>
<td>402</td>
<td>5</td>
</tr>
<tr>
<td>Brands (Number)</td>
<td>19.67</td>
<td>8.621</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>Tourists (Millions pax)</td>
<td>14.37</td>
<td>4.67</td>
<td>24.35</td>
<td>8.78</td>
</tr>
<tr>
<td>Temperature (Celsius)</td>
<td>15.463</td>
<td>5.5523</td>
<td>24.0</td>
<td>7.2</td>
</tr>
<tr>
<td>GDP (Million euros)</td>
<td>2,66,958</td>
<td>10,378</td>
<td>2,88,429</td>
<td>2,49,652</td>
</tr>
</tbody>
</table>

Table III. Descriptive statistics (2007-2014, quarterly basis, n = 192)
Table IV.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sales (€)</th>
<th>Sales (HI)</th>
<th>Outdoor</th>
<th>Print</th>
<th>Broad.</th>
<th>Internet</th>
<th>Employ.</th>
<th>Capital</th>
<th>Brands</th>
<th>Tourist</th>
<th>Temp.</th>
<th>GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (€)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales (HI)</td>
<td>0.987</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor</td>
<td>0.453</td>
<td>0.520</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Print</td>
<td>0.582</td>
<td>0.599</td>
<td>0.558</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broad.</td>
<td>0.564</td>
<td>0.576</td>
<td>0.660</td>
<td>0.581</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td>0.382</td>
<td>0.402</td>
<td>0.410</td>
<td>0.260</td>
<td>0.292</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employ.</td>
<td>0.966</td>
<td>0.982</td>
<td>0.498</td>
<td>0.592</td>
<td>0.541</td>
<td>0.353</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>0.902</td>
<td>0.923</td>
<td>0.561</td>
<td>0.607</td>
<td>0.506</td>
<td>0.337</td>
<td>0.939</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brands</td>
<td>0.830</td>
<td>0.861</td>
<td>0.604</td>
<td>0.609</td>
<td>0.591</td>
<td>0.377</td>
<td>0.817</td>
<td>0.821</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist</td>
<td>0.185</td>
<td>0.167</td>
<td>-0.063</td>
<td>-0.093</td>
<td>-0.231</td>
<td>0.062</td>
<td>0.186</td>
<td>0.181</td>
<td>0.031</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temp.</td>
<td>0.153</td>
<td>0.142</td>
<td>-0.154</td>
<td>-0.051</td>
<td>-0.295</td>
<td>-0.022</td>
<td>0.164</td>
<td>0.153</td>
<td>0.004</td>
<td>0.807</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-0.036</td>
<td>-0.007</td>
<td>0.004</td>
<td>-0.060</td>
<td>-0.022</td>
<td>-0.084</td>
<td>0.032</td>
<td>-0.011</td>
<td>-0.113</td>
<td>-0.191</td>
<td>0.096</td>
<td>1</td>
</tr>
</tbody>
</table>

Notes: \(^{a}p < 0.01; \(^{b}p < 0.05\)
traditional DEA model, results evidence a high correlation between these estimates (Pearson correlation coefficient = 0.993; \( p = 0.000 \)). However, the Wilcoxon test detected significant differences between the median levels of efficiency (\( Z = -11.995; \ p = 0.000 \)). In any case, given that the bias-corrected bootstrap estimates of efficiency are more robust than the traditional estimates of efficiency, results highlight a huge advertising overspend in the considered period.

In Model 2, the obtained results show that the average efficiency for the firms considered varies between 0.931 (DEA model) and 0.897 (BC model) between 2007 and 2014. As expected, and although the results are not comparable, the efficiency estimates in Model 2 are higher than in Model 1, as the latter model includes a larger number of inputs. Under this assumption, DEA loses its discriminatory power as firms can specialize in any of the inputs to become efficient.
Regarding the advertising efficiency of the individual firms in Model 1, **Grupo Damm** shows the highest level of efficiency for the period analysed (0.568 in the DEA model and 0.408 under the BC model), while **CC. Canarias** shows the lowest level (0.405) in the DEA model and **La Zaragozana** shows the lowest level (0.297) in the BC model. In Model 2, **Mahou-San Miguel** is the most efficient firm for the considered time period (0.970 in the DEA model and 0.945 under the BC model), while **Hijos De Rivera** is the less efficient firm (0.845 in the DEA model and 0.792 under the BC model). These results highlight the idea that managers should be aware of the efficiency of their advertising activity.

Regarding the evolution of the efficiency over time, data show a slight decrease of efficiency over time within Model 1. This drop is especially pronounced in 2012. In Model 2, the evolution of efficiency is steady during this period.

Table VI shows the bias, and the lower and upper bounds of the efficiency confidence intervals estimated with bootstrapping. The biases are substantial for all the firms and the confidence intervals estimated are wide in Model 1, which shows the high statistical variability of the efficiency estimates. Further, some of the intervals overlap, which suggests that only some of the rankings indicated by point traditional DEA estimates are confirmed.

Table VII shows the results of the truncated bootstrapped regression. Despite the results being not directly comparable (given the models use different dependent variables), results are very similar among the different specifications. Furthermore, the Daraio et al. (2015) proposal is used to test separability. The joint test ($p = 0.889$ in Model 1 and $p = 0.801$ in Model 2) indicates that there is no evidence against separability. This result is not surprising given the low correlation indexes between the environmental variables and the inputs and outputs.

<table>
<thead>
<tr>
<th>Model</th>
<th>Efficiency (DEA)</th>
<th>Efficiency (BC)</th>
<th>Bias</th>
<th>Lower bound</th>
<th>Upper bound</th>
<th>Bound difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mahou-San Miguel</td>
<td>0.544</td>
<td>0.391</td>
<td>0.153</td>
<td>0.318</td>
<td>0.487</td>
<td>0.169</td>
</tr>
<tr>
<td>Heineken España</td>
<td>0.482</td>
<td>0.344</td>
<td>0.138</td>
<td>0.285</td>
<td>0.409</td>
<td>0.125</td>
</tr>
<tr>
<td>Grupo Damm</td>
<td>0.568</td>
<td>0.408</td>
<td>0.160</td>
<td>0.330</td>
<td>0.508</td>
<td>0.178</td>
</tr>
<tr>
<td>Hijos de Rivera</td>
<td>0.419</td>
<td>0.305</td>
<td>0.114</td>
<td>0.259</td>
<td>0.358</td>
<td>0.099</td>
</tr>
<tr>
<td>CC. Canarias</td>
<td>0.405</td>
<td>0.309</td>
<td>0.095</td>
<td>0.262</td>
<td>0.371</td>
<td>0.109</td>
</tr>
<tr>
<td>La Zaragozana</td>
<td>0.409</td>
<td>0.298</td>
<td>0.110</td>
<td>0.248</td>
<td>0.352</td>
<td>0.104</td>
</tr>
<tr>
<td>Mean</td>
<td>0.471</td>
<td>0.343</td>
<td>0.128</td>
<td>0.284</td>
<td>0.414</td>
<td>0.131</td>
</tr>
<tr>
<td>SD</td>
<td>0.337</td>
<td>0.232</td>
<td>0.112</td>
<td>0.187</td>
<td>0.291</td>
<td>0.110</td>
</tr>
<tr>
<td>Minimum</td>
<td>1.000</td>
<td>0.785</td>
<td>0.438</td>
<td>0.663</td>
<td>1.019</td>
<td>0.415</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.059</td>
<td>0.042</td>
<td>0.015</td>
<td>0.037</td>
<td>0.049</td>
<td>0.012</td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mahou-San Miguel</td>
<td>0.970</td>
<td>0.945</td>
<td>0.025</td>
<td>0.923</td>
<td>0.994</td>
<td>0.071</td>
</tr>
<tr>
<td>Heineken España</td>
<td>0.882</td>
<td>0.842</td>
<td>0.040</td>
<td>0.812</td>
<td>0.895</td>
<td>0.083</td>
</tr>
<tr>
<td>Grupo Damm</td>
<td>0.967</td>
<td>0.943</td>
<td>0.024</td>
<td>0.922</td>
<td>0.992</td>
<td>0.069</td>
</tr>
<tr>
<td>Hijos de Rivera</td>
<td>0.845</td>
<td>0.792</td>
<td>0.054</td>
<td>0.754</td>
<td>0.851</td>
<td>0.098</td>
</tr>
<tr>
<td>CC. Canarias</td>
<td>0.956</td>
<td>0.922</td>
<td>0.034</td>
<td>0.894</td>
<td>0.972</td>
<td>0.078</td>
</tr>
<tr>
<td>La Zaragozana</td>
<td>0.968</td>
<td>0.936</td>
<td>0.033</td>
<td>0.907</td>
<td>0.989</td>
<td>0.082</td>
</tr>
<tr>
<td>Mean</td>
<td>0.931</td>
<td>0.897</td>
<td>0.035</td>
<td>0.869</td>
<td>0.949</td>
<td>0.080</td>
</tr>
<tr>
<td>SD</td>
<td>0.092</td>
<td>0.086</td>
<td>0.029</td>
<td>0.085</td>
<td>0.103</td>
<td>0.059</td>
</tr>
<tr>
<td>Minimum</td>
<td>1.000</td>
<td>0.991</td>
<td>0.174</td>
<td>0.984</td>
<td>1.128</td>
<td>0.291</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.553</td>
<td>0.534</td>
<td>0.007</td>
<td>0.521</td>
<td>0.549</td>
<td>0.013</td>
</tr>
</tbody>
</table>

**Note:** Total number of iterations = 2000
As can be seen, the intercept term and all the explanatory variables are statistically significant in all the models. At this point, it must be stressed that the dependent variable represents the mode of inefficiency (Shepard’s estimate); thus, a parameter with negative sign indicates a positive effect on efficiency while a positive sign indicates a negative effect on efficiency.

Overall, results suggest that the environmental variables considered have a significant effect on the efficiency of firms. As can be seen, the number of tourists and temperature has a positive effect on efficiency in all models. Concretely, these variables positively affect beer sales and, although these sales could be wrongly attributed to a clever use of advertising inputs, results suggest that firms benefit from environment. Otherwise, GDP is negatively associated with advertising efficiency in Models 1a and 1b but positively associated in Model 2. In this sense, it must be reminded that the dependent variable is different in Models 1 and 2. In any case, it highlights the importance of including these variables in the analysis.

Regarding brand strategy scope, results show a negative effect of the brand portfolio on firms’ advertising efficiency. As the width of the brand portfolio increases, inefficiency increases or, alternatively, efficiency decreases. This result implies that firms using a wide portfolio decrease their advertisement efficiency in marketing communications. Therefore, when a firm launches a new product (brand) into the market, it seems that it must make a bigger advertisement investment to obtain a certain level of sales than would be needed if the product had been launched with the same brand name as previous products.

Finally, the variable reflecting the effect of internet advertising on efficiency is also significant. As could be expected, internet investment has a positive effect on efficiency, which is consistent with Pergelova et al. (2010). One of the advantages of the internet is its cost-effectiveness, which allows firms to target interested consumers with a lower cost.

5. Conclusions, implications, limitations and further research
The assessment of advertising efficiency provides useful information to managers about differences in performance among firms and the potential for improvement. For this reason, the goal of this paper is to estimate advertising efficiency. This topic is crucial in a competitive environment as inefficient advertising spending contributes to lower profit margins and sales losses (Luo and Donthu, 2005). Further, the effects of environmental variables and brand strategy are considered.

Overall, the results of the empirical application carried out on a sample of Spanish brewers show a high degree of advertising inefficiency. Further, the environment, the brand

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1a coefficient</th>
<th>Model 1b coefficient</th>
<th>Model 2 coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>3.040 e+00*</td>
<td>−6.095 e+00*</td>
<td>1.096 e+00*</td>
</tr>
<tr>
<td>Number of tourists</td>
<td>−1.122 e−02*</td>
<td>−3.064 e−03*</td>
<td>−3.888 e−05*</td>
</tr>
<tr>
<td>Temperature</td>
<td>−1.289 e−01*</td>
<td>−5.115 e−02*</td>
<td>−2.692 e−04*</td>
</tr>
<tr>
<td>GDP</td>
<td>2.958 e−06*</td>
<td>2.605 e−06*</td>
<td>−1.358 e−07*</td>
</tr>
<tr>
<td>Brand portfolio</td>
<td>7.717 e−01*</td>
<td>7.695 e−01*</td>
<td>1.310 e−02*</td>
</tr>
<tr>
<td>Internet</td>
<td>−1.067 e+01*</td>
<td>−4.183 e+00*</td>
<td>−1.193 e−01*</td>
</tr>
<tr>
<td>Dummies for quarters</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Dummies for firms</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Variance</td>
<td>9.617</td>
<td>6.088</td>
<td>0.1435</td>
</tr>
</tbody>
</table>

Notes: *p < 0.05; total number of iterations = 2000
portfolio scope and the internet strategy have a significant effect on these estimates. Thus, the effect of these variables cannot be ignored without introducing some bias to the analysis.

The results obtained in this paper have significant implications for managers. It should not be forgotten that Spanish brewers invest a huge amount of money on advertising to promote their brands and also to attract consumers. This fact increases managers’ responsibility for a clever advertising investment, and it highlights the importance of monitoring advertising performance. In this sense, the estimation of advertising efficiency might be used as external benchmarking. From a managerial perspective, the process of benchmarking requires measuring the difference between the current performance level of a firm and the best possible practice. Afterwards, firms must identify the underlying causes of this difference. In terms of efficiency, this process implies that an (advertising) inefficient brewer should examine the reasons why other brewers are more efficient. This paper offers some interesting insights on this topic.

First, the results show a significant effect on advertising efficiency for each of the exogenous variables included in the analysis. This illustrates that when estimating efficiency one should not only be limited to advertising-related variables but also control for exogenous factors that could affect the ability of the firm to transform inputs into outputs. Although one might think that all the firms included in the analysis face the same operational environment, there are seasonal environmental changes that have an effect on the heterogeneity of the efficiency estimates. In fact, efficiency estimates which do not account for the operational environment have only a limited value. Therefore, if the firms in a given sample are influenced by environmental variables, which are out of the control of managers, the efficiency analysis should take into account this circumstance.

Second, the results of this paper show a negative effect of brand portfolio on advertising efficiency. In terms of the effectiveness of brand portfolios in creating value-added for firms, this result suggests that reinforcing the promotion of the individual familiar brand might be preferred to fostering a strategy with a wider portfolio. Results suggest that a larger brand portfolio decreases the efficiency of a company’s investment in advertising by reaching a certain level of sales with a bigger level of investment than would be needed if the same product was launched by the company with an individual brand. It seems that larger brand portfolios are inefficient because they lower scale economies and dilute marketing expenditures (Morgan and Rego, 2009).

Third, results show that internet advertising has a positive effect on efficiency. This result reinforces the advantages this cost-effectiveness strategy. In this sense, although internet is a young advertising medium (compared to traditional medium such as TV or print advertising), it is interesting for managers to note that brewers can obtain efficiency gains thorough this medium. Its interactivity and its ability to transmit information quickly and inexpensively to interested consumers (Pergelova et al., 2010) implies that managers should make a big effort to implement effective online campaigns.

Of course, this paper has also several limitations. First, one of the limitations of the study is the potential generalization of the conclusions to other sectors, which must be done with care, as only one industry has been analysed. Moreover, although this paper considers three environmental factors that affect advertising efficiency, it would be possible to include other relevant variables which may also affect efficiency. However, lack of information impedes the analysis of other efficiency determinants. Third, in this paper, the separability condition between the inputs/outputs and the environmental variables is assumed and tested. Obviously, failure to reject the null hypothesis of separability does not imply by itself that separability holds. In fact, failure to reject might be due to other factors (e.g. insufficient data or too many dimensions).
Finally, future research should try to overcome these limitations. This paper provides a starting point for the further study of other factors causing the observed efficiency differences. In particular, instead of employing general environmental variables, which affect all the firms in the same manner, future research might include specific environmental variables for each firm included in the sample. These variables could be related to the level of competition the firm faces or the strength of the brands advertised. Brand strength is one of the central components of brand equity, and not only can brand strength be conceptualized in terms of consumers’ attitude towards the brand with respect to quality, but also integrates behavioural dimensions such as brand loyalty and brand share across the markets in which the brand competes; so it is expected that brand strength might influence advertising efficiency. Ultimately, future studies are also encouraged to replicate and to validate the proposed model in different countries and different contextual settings.

References


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Q-methodology: theoretical framework for policy making in the Croatian wine sector

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Abstract

Purpose – The purpose of this paper is to show the application of Q methodology in the practice of policymaking, namely, in the field of the wine business. Today, Q methodology has a rising significance in all aspects of human behavior where there is a need for gathering and analyzing qualitative data. This paper discusses the applicability of Q methodology as a participative bottom-up tool for extracting priorities for tailor-made sectorial policies in the field of the wine business.

Design/methodology/approach – Developed by William Stephenson almost a century ago, Q methodology was primarily used to study human behavior in different psychoanalysis practices and personality tests. But it can be used also as a tool to extract important opinions of stakeholders in the process of making new sectorial policies. To prove the applicability of Q methodology for this task, data collected from 30 small and medium Croatian winemakers are used as a case study. Selected winemakers originate from coastal and continental regions of Croatia covering the whole country. Gathered data were analyzed using the PQMethod ver. 2.35 software.

Findings – The results of the data analysis have given an insight into Croatian small wine business perspectives, rapidly revealing factors which matter the most to them (luck, value added tax, import lobby, margins in HORECA). On the other side, factors like automated grape harvesters, subsidized fair participation were identified that matter the least, and factors like prices and procedures for mandatory analyses, paperwork for exports and development of new sales channels are considered as neutral.

Research limitations/implications – The selected participants are a small, but representative, group of Croatian winemakers and generalization of findings to the whole winemaking sector should be undertaken with caution. Q methodology is primarily an explorative technique, which brings a sense of coherence to the relation of the research question and contested answers, but prone to straightforward change.

Practical implications – Q methodology enables a participatory approach, rapid analysis and focus on the most important factors for changing relations and effects of planning and execution of sectoral policies. It can be used to effectively extract relevant factors common to group of different individuals acting in the same sector with the same goal.

The authors would like to thank all respondents for this study, support from Dr Leo Gracin from the Faculty of Food Technology and Biotechnology – University of Zagreb, and M. Eng. Agr. Hrvoje August from the company Ireks d.o.o., Zagreb.
1. Introduction
Since the independence in 1991, the Croatian Parliament and Government tend to positively influence the domestic viticulture and enology sector based upon their legislative roles. Primarily that was visible through the adoption of various laws and ordinances aimed at regional and rural development and agricultural support, as well as strategies, plans and programs in the wine sector. It is occasionally mentioned in the Croatian public that Croatian legal and incentive frameworks do not reflect the security of business and do not provide a chance to support achievement (Marić, 2009; Bičak, 2014; Petković, 2016; Klikaj, 2014). On the other hand, Croatian Government is willing to introduce selective measures to cope with sector-specific threats (Rak-Šajn, 2016).

With an aim to enhance growth and stability of the economy, every government tends to recognize particular sectorial needs through the creation of sectorial policy. To extract priorities for an appropriate sectorial policy, in theory, all stakeholder groups or at least beneficiaries have to be included. In practice, this can be very difficult. For example, the main characteristic of the Croatian wine sector is that it has a scattered and much-dispersed vineyard structure where vineyards up to 5 hectares make 99.4 per cent of the surface total and 68.8 per cent of total wine produced (CCE, 2015).

A certain number of Croatian scientists has acknowledged a number of challenges for agricultural policy planning in the market economy, and they call for an integrative and holistic approach (Defilippis, 1993; Brkić and Žutinić, 2002). The inclusion of different groups, or raising the level of stakeholder participation in the development of agricultural policies, certainly increases the value of the developed policy in terms of “integration and holism,” but inevitably affects the complexity of the “policy blueprint” and its implementation. Nevertheless, most of the agricultural policy measures in Croatia put into force since its independence onwards had a foothold in the Federal legislation of Yugoslavia. With its independence, Croatia inherited an obsolete agricultural policy unable to meet the challenges of international trade liberalization. The agricultural legislation was retrieved with minimal changes, to allow the state to function normally. The overall agricultural price system was based on production costs (central planning heritage) and therefore significantly susceptible to external prices. Moreover, it should be considered also that Croatia was preparing for membership in the WTO (what happened in 2000). Croatian post-war government planned to find a balance between world trends in reducing the protection of agricultural producers and increasing, in that period, quite low incomes of domestic farmers. Contrary to the plan, the main consequences of the price reform from the year 1988 were: lack of system transparency, uncertainty of farmers, complexity of measures implementation, high administration costs and production inefficiencies (Franić, 2005).

Additionally, it is not clear whether “the reforms are understood?” (Božić et al., 2009). Specific recommendations for policymakers in Croatia were simplification and rationalization of the subsidies, including local people into the development of support programs, efficient assessment of local actions, decision-makers’ training towards raised awareness of linkages of macroeconomic, regional and sectoral policies and agriculture in rural areas (Franić et al., 2003). Unfortunately, Croatian agricultural policy measures from 2016 that are complied with EU – CAP
(Common Agricultural Policy) have not brought preferable features for most of the beneficiaries (Agrobiz, 2016). The motivation for this study is to explore the practical use of Q methodology as a participative bottom-up tool in policy creation.

It is still in question what the objective problems in the wine business sector are, as the worst starting point to look for a solution is always a subjective opinion of a certain stakeholder. But what if there is an effective approach to organize shared ways of thinking about particular issues, which could draw objective conclusions regarding the making of a strategy for solving problems? In most organizations, the adoption of the strategy (documents) can be seen as a result of the mutual interaction of the following three main aspects: environment, organized system and leadership (Mintzberg, 1978). The environment is constantly and unpredictably changing. Therefore, organized systems attempt to ensure the stabilization of their actions regardless of the environment and the leadership mediates between the environment and the system. In other words, the leadership wants to adapt the system to the changes in the environment. It entails responsibility for two basic elements. The first one is the analysis of the limiting factors and the second one is to undertake the activities proposed by the leadership (Wofford, 1982). The most common limiting factors are motivation, division of roles/responsibilities and the environment itself.

To adapt the system to the environmental changes, the appropriate goals have to be set and defined. Goal setting comes before taking action, and it makes sense for any area of action where it is possible to manage the action’s outcome to some extent (Locke and Latham, 2006). Unclear goals have a significantly higher negative impact on the overall success in comparison with goals set too high (Locke and Latham, 1990). The most significant practical problems in achieving the goals are inadequate assessment of the timeframe, emergence of new problems during the action, inefficient coordination of activities, giving priority to operational activities over strategic decisions, insufficient knowledge and skills of employees in the process of implementation, poor and inadequate preparation of the lower levels of management involved in the process, negative impact on the environment, poor management at the lower level, vaguely defined tasks and activities of all stakeholders in the process and fluctuation of responsible employees (Alexander, 1985).

It is important to emphasize that the goals set out in official policy documents, or their fulfillment, may or may not be compatible with the goals of all stakeholders or groups/individuals among them. In this sense, and to increase the probability of achieving the objectives, the process of developing strategic documents has to respect participatory development including the contribution of stakeholders. The stakeholder concept indicates any person or group that may affect the achievement of the objectives of a certain organization or the achievement of these same goals can affect that person or same group (Freeman, 1984). The high aims of an individual, whose goals are also compatible with the goals of the group, result in increased effects of the group. One of the methods which can be used in the process of developing strategic documents, which also takes the contribution of different stakeholders into account, is Q methodology. As a practical method of rapid analysis, Q methodology counts on individuality to understand the concerns and expectation of relevant stakeholders. The scientific objectivity of the obtained results indicates the importance of Q methodology as a valuable tool for policymakers. In this paper, Q methodology is used for extracting priorities for policy making in the Croatian Wine sector. With more details, Q methodology is used for a case study of small wine business perspectives, generally a complex subject. Namely, small wine businesses are characterized by three elements necessary for success: capital, winemaking skills and effective marketing program (Lamy, 2015). Wine business owners by nature vary when it comes to the level of these skills, but there are two questions that need to be asked – to which
extent does this happen and what is the most problematic element that needs to be tackled? Q methodology entails focus on semantic patterns for both issues.

2. Literature review

There are no available scientific papers mentioning or analyzing the path or approach that was used in the process of making the policy programs in viticulture and winemaking for Croatia. However, there are several research papers that emphasize participatory discourse, e.g. importance of the participatory dialogue for the development of rural areas by using Q methodology as a dialogue tool (Messely et al., 2013), determination of the success factors in participatory planning process (Gedikli, 2009), overcome of initial stakeholder attitudes with aim to develop sustainable development in rural areas (Cueñar-Padilla and Calle-Collado, 2011), use of Q methodology to determine negative environmental and social impacts of projects on sub-national level (Weldegiorgis and Saleem, 2016) and role of the Q methodology in a process of discursive democracy in creation of the feasible resource management plan (Kincaid, 2011). The participative approach can be addressed differently as well, e.g. by nonlinear analysis instrument like fuzzy cognitive maps (Fabbrizzi et al., 2015) or correlating expert and producer answers in correlated competitive profile matrix (Jaksic et al., 2015).

The research for the European Commission’s Science and Society Action Plan (EC, 2002a) shows that 72 per cent of respondents (from EU sample) wish that politicians used expert opinion in decision-making. Also, in the public debate “CAP Policy after 2013”, among other things, citizens call for food security, restriction of the influence of multinational companies, limitations for speculators of agricultural prices, competitive farming and a slowdown of the rural exodus (EC, 2010). In general, the governance on the EU level is complex in its implementation and faces a lack of citizen trust and understanding of policies (EC, 2001), which has not changed until today. The guidelines for policy formulation on EU level are seen by citizens as both “distant and inaccessible Brussels” and “overdone Brussels” (EC, 2001, 2002b). A participatory approach in policy adoption and implementation redefines the government from an “executive role” to a “permissible to execute role” (Curry, 2001); therefore, the community participation is required. On the other hand, the adequate communication platform with the community should not, in the end, turn to a costly and ineffective process (Irvin and Stansbury, 2004).

Typical target applications of Q methodology include the study of human subjectivity (Goldman, 1999), perspectives, opinions and attitudes of respondents (Previte et al., 2007; Gabor, 2013). Q methodology is referred to as an excellent tool for the case studies of different types of human behavior (Smith, 2001). Therefore, the application of Q methodology found its way to agricultural sciences in different parts of the world. It was also used for these issues: revealing management strategies of almond and grape growers in California (Brodt et al., 2006), identifying perspectives on notions of agricultural stewardship of lowland farmers in the area of East Anglia (Davies and Hodge, 2007), identifying attitudinal discourses towards non-point source pollution of citrus growers from Ping river basin (Thailand) (Bumbudsanpharoke et al., 2009), exploration of the perception of stakeholder groups towards environmental, social and economic aspects of the marine aquaculture of Catalonia (Bacher et al., 2014), identification of the innovations acceptability for chain members and consumers in the supply chain systems in Belgium, Finland and Italy (Nicholas et al., 2014) and for identifying Norwegian farmers’ perspectives on multifunctional role of agriculture (Kvakkestad et al., 2015).
3. Methodology

Q methodology is a relatively less known, “abductive” methodological tool that has a starting point in observation, collection, and analysis of qualitative data (p. 148, Rogers, 2011). The abductive reasoning goes from an observation to a theory, which accounts for the observation, ideally seeking to find the simplest and most likely explanation (Sober, 2004). Q methodology was developed by William Stephenson, a doctor in physics and psychology in the thirties of the twentieth century. The methodology is explained in the book entitled “The study of behavior: Q-technique and its methodology” and its use is suggested in a variety of psychoanalytic directions (social, self, clinical and type) together with projective tests and personality tests (Stephenson, 1953). It is used to uncover what individuals believe and think about the topic of the study (Sickler et al., 2006).

Q methodology stands on concourse theory what is substrate matter upon which individuals generate new meanings and ideas (Brown, 1995). It could be used when policy planning is difficult due to the competing agendas and power differentials among stakeholders (Weldegiorgis and Saleem, 2016).

The first step of Q methodology process is the formulation of the research question. The research question has a crucial role, as it is the source for the later creation of a “Q-set” and has an inevitable purpose in the research. It must be specific and focused on the topic or issue (Rogers, 2011), unequivocal, straightforward and should be defined before the start of the field work (Watts and Stenner, 2005). After the research question is formulated, the selection process for the “statements” of the Q-set follows with their arbitrary number of statements and their numbering for later identification.

A concourse becomes the instrument for collecting data via the Q-sample. As individuals organize concourse stimuli based on their own sense-making, new knowledge is generated (Stephenson, 2007). As an adequate number of statements, scholars recommend 30-60 or even 40-80 (Curt, 1994; Stainton Rogers, 1995). Each of the statements must necessarily constitute a potential answer to the research question and should represent a “dynamic medium” through which subjectivity can be actively expressed (Stephenson, 1953). It is recommended to initially generate a larger number of statements to form the concourse that can be numerically reduced to a “sound” number of statements through the process of “piloting” (Watts and Stenner, 2005). Piloted Q-set should fit into a quasi-normal “Q-sort grid” in the relatively narrow (–3 to +3) or wide (–6 to +6) interval (Rogers, 2011). Figure 1 is an example of the Q-sort grid of a quasi-normal distribution containing 69 available places. The same grid was used in the research described in this paper.

Figure 1.
“Q-sort grid” for placing 69 enumerated statements of the “Q-set” in interval “−3/+3”
The following step is the field interview with participants. A very large number of participants in Q methodology research may be counterproductive in the context of a qualitative technique (negating subtle nuances); therefore, 40 to 60 participants or far fewer is recommended (Watts and Stenner, 2005). Each participant is confronted with the research question and a Q-set of selected enumerated cards with statements regarding the research question. The respondent undertakes the first reading of cards and makes a “rough” card selection into three piles:

1. agreeable statements (subjectively evaluated as positive);
2. disagreeable statements (subjectively evaluated negative); and
3. pile of statements for which the respondent is hesitant, neutral or expressed doubt for their value or significance.

This step ensures proper introduction of all available statements of the Q set. The next step is the placement of statements from three piles into the Q-sort grid (Figure 1). The Q-sort grid should respect the form of a quasi-normal distribution and arbitrary $-/+\text{ interval}$, therefore “force” the participant to rank statements. “Q-sorting” of cards can be done manually with printed cards or more effectively by user-friendly computer software installed on a laptop. Later on, dedicated free software like PQMethod or other software such as MS Excel® or IBM SPSS® should be used to analyze the results, i.e. to obtain the “Q-factors”.

The calculation of correlation values and factor analysis of the results is determined by the level of naturally grouped attitudes towards the given Q-set, between individual respondents and specific groups of respondents. Respondents with a similar vision of the individual statements of the Q-set share a common “factor” and create a so-called “loading” for the same statements. The factor analysis uses abductive reasoning seeking logical interference through an iterative process of hypothesis generation and testing using factor analysis (Brown, 1980). Factors with greater “loading” are important for the observation and analysis. Interpretation of factors and conclusions depend on “characterizing statements” that have positive/negative “protruding” loading. Distinctive and consensual statements highlight the differences and similarities between certain factors. During the interview process, it is allowed to record/note the statements of respondents that can be used later on as arguments in the interpretation of factors. Q methodology respondents actually examine their thinking and are “forced” to rank sometimes “conflicting” ideas, attitudes and interests (p. 156, Rogers, 2011).

4. Results
4.1 Setup for data analysis
In this research, factors were extracted using the PQMethod ver. 2.35 software and options for the principal component factor analysis (PCA) were selected. This method was chosen because its resulting vectors (factors in this case) are uncorrelated orthogonal bases set. Therefore, as much of the variability in the data as possible can be taken into account for the resulting analysis. Data were entered manually into the mentioned software, and it calculated the correlation matrix, Eigenvalues, factor rotation and performed the factor analysis excerpting significant sorts and factor scores. PQMethod software offers also the Centroid and Horst’s centroid analysis. The original choice for its developer Stephenson and followers was Centroid analysis, whereas PCA is the default method of factor extraction in the SPSS software. Horst’s centroid analysis represents a somewhat more refined approach regarding how the diagonal entries in the correlation matrix are estimated and do not show
certain irregularities that were found in several data sets when analyzed with the customary Centroid method (Schmolck, 2015).

The chosen research question “What do I need to prosper in the wine business in the next 15 years,” problematically leans on previous research of the authors on the stagnant Croatian wine market (Jaksic et al., 2015). Additionally, it can result in possible different measures for risk reduction in the Croatian wine sector related to small business (Bedek and Njavro, 2015). A determiner “What” tends unequivocally and straightforwardly to question subjective opinion regarding offered statements of the “Q-set.” “Need” is something that is needed for the sake of “prosperity” and the long-term period of “next 15 years” is chosen due to the nature and complexity of the wine business.

The size of the Q-set is determined by the analysis of colloquial “keywords” used by owners of winemaking businesses and various wine experts in personal contact, and data gathered from various public sources, i.e. daily/weekly newspaper, and ministries and wine-related websites. Statements (in the Q-set) covered the theoretical fulfillment of general groups of needs from the aspect of wine technology, economy, climate, state governance and business administration in general. The next step was the “piloting” process (Watts and Stenner, 2005), with the aim of reducing/refining the number of Q-set statements (p. 158, Stainton, 2011) to make it more manageable and balanced. The total number of Q set statements was finally set to 69 [10-wine technology (14.5 per cent), 25-state governance and business administration (36.2 per cent), 30-economy (43.5 per cent), 3-climate related (4.4 per cent), and 1-universal (1.4 per cent)].

4.2 Participants
As mentioned before, the number of participants in Q methodology is not decisive. Composite reliability of 0.9985 is demonstrated with \( n = 170 \) (Marshall, 2003) while a minimum of five Q sorts reaches factor reliability of 0.9524 with the much lower cost at between 35 and 40 participants or less. In that sense, it was feasible to interview at least two participants from the biggest vine-growing regions of Croatia to maintain the consistency of participants’ number for each region in this research. Participants of the study were 30 small and medium wine business owners. From the participant group, 23 of them represent five continental winegrowing regions, and seven represent two coastal winegrowing regions of Croatia. They were chosen among the best small and medium wine business owners from each region according to the following criteria: regional leaders, winners on significant major wine competitions, repeated recipients of excellent wine reviews, producers of the representative assortment of autochthonous and international varieties of vines, and not exceeding the official characteristics for SMEs. Each participant was interviewed personally. The participants were 23 men and seven women, on average 43.4 years old (one is in age group 30 or less, 23 are in the age group 31-54, five are in the age group 55-64 and one is in the age group >64), producing in total 125.9 hl of wine (10.1 per cent of Croatia’s total national wine production for the year 2013, CCE, 2015), and harvesting 1,421 ha of vines (6.7 per cent of Croatia’s total national vine fields in 2013, PAAFRD, 2013). Thirteen of them are exporters (43.3 per cent). All of them are notable for production of at least one internationally competitive wine. Nine (30.0 per cent) of them have internal enology expertise and eleven (70.0 per cent) use external enology expertise. All of them are regular competition winners of at least one domestic local and national wine competition. Six of them are medal winners at prestigious national and international competitions (Figure 2).
4.3 Obtained Q sorts
As mentioned above, the results were obtained using the PCA factor extraction option. Results of PCA showed eight primary factors. The first factor (Perception 1 (P1)) represents 34 per cent of the total variance between all 30 sorts and is characterized by the total of 17 defining sorts, the acceptable composite reliability of 0.986, and standard error of factor Z-scores 0.120 (Brown, 2000). The following sort group from the second factor and up to the eighth factor is characterized by reducing number of defining sorts. Therefore, they were considered of no crucial importance for further analysis.

Extracted results for Perception 1 are emphasized by the following factors of prosperity: 69 – Luck, 35 – Reduction of VAT, 27 – Cease of state support for import lobby, 59 – Smaller margins on wine in HORECA, 26 – That the state ceases to support small market players, 21 – National fire prevention programs, 17 – The work of state to reduce unfair competition, informal economy, 25 – That the state ceases to support the large market players, 48 – The development of tourism in general and wine tourism in my area, 68 – Good vintages in a row, 14 – Grants which are reached by simplified procedure, 22 – Highly subsidized foreign fair participations (by Chamber of Commerce or State); followed by: 61 – Shorter deadlines for payment of sold wine, 50 – Reliable information on foreign markets that will allow me to start or rise wine exports, and 10 – to hire top enologist. Perception 1 emphasized indifference towards following factors: 31 – simplification of mandatory analyses procedures at State authorities, 32 – Cheaper prices for mandatory analyses from state authority and 57 – Simpler paperwork for exports.
Consensus statements that are not distinguishing between any pair of factors are as follows: 30 – Inspection control of wine in the stores to prevent quality fraud, 32 – Cheaper prices for mandatory analyses from state authority, 42 – Development of new sales channels for my wine and Programs to prevent and compensate damages caused by game (Table II).

5. Discussion
Perception 1 accentuates factor loadings on the “State problem area” statements, and this may indicate respondents’ strong concern towards the economic situation, buying power of consumers and business perspectives in Croatia. At the same time, there is a strong commitment to keep the business running straight (64 – Expand my cheaper product assortment by importing wine, 65 – To move the business to another country). This may be explained by the existing awareness that quality-oriented wine business is a long-term project and goes hand in hand with identity building.

Statement 53 – Automated grape harvesters, is principally loaded and commented negatively due to the prevailing perception and respondents’ noted comments of harvesters’ imperfection in comparison with manual work which is expected to be affordable and available (52 – Cheaper manual labor, 51 – Availability of labor force). Perception 1 negatively emphasizes statement 22 – Highly subsidized foreign fair participations (by Chamber of Commerce or State) what is not surprising due to the persevering (negative) opinion among small winemakers about the effects and costs transparency for foreign fair participation under State’s and Chamber’s sponsorship (Jutarnji list, 2010; Singer, 2012; Nezirović and Jelić, 2013) and Chamber’s compulsory membership (Hina, 2014).

Consensual statements that are not distinguished by any pair of factors in this research are as follows: 30 – Inspection control of wine in the stores to prevent quality fraud, 32 – Cheaper prices for mandatory analyses from state authority, Development of new sales channels for my wine, 23 – Programs to prevent and compensate damages caused by game. They reveal the perception of possible problems with (and long-term detrimental effect of) quality assurance of system in force, followed by probable disinterest for the incremental impacts of small losses and missed business chances. Indeed, the explanation for such tepidity (regardless of evident State system deficiencies) may be found in their success in lobbying for tightened wine analysis system in 2016, primarily regarding bulk (cheap) wine imports (Scitar, 2016) and effects of remarkable results in tourist visits in 2016 and 2017, which were intensively advertised in national media by the Croatian National Tourist Board (CNTB). It has to be noted here that CNTB is a parastatal organization financed by sojourn taxation of tourists, compulsory membership from the hospitality industry and State budget.

Respondents included in Perception 1 commented on their satisfaction with their present sales channels. They expressed a wish for grants by simplified procedure, dissatisfaction with any procedure which includes fulfilling administrative conditions for obtaining funds from the state at current application procedures and especially from EU funds.

During the interviews, the respondents had additional comments on what was valuable and gave a precise subjective explanation. After seeing the first few statements, the respondents’ interest in the card sorting process increased significantly, and they commented openly on their card choices, frequently asking for the approval from the interviewer regarding the validity of the card rankings. They were carefully reminded of the importance of their subjective thinking for this research. They perceived some statements as provocative or led to a digression (25 – That the state ceases to support the large market players, 27 – That the state does not support importing lobby, 35 – Reducing the value-added tax, 59 – Smaller margins on wine in HORECA).
<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>QS-V</th>
<th>No.</th>
<th>Statement</th>
<th>QS-V</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Cease of state support for import lobby</td>
<td>+3</td>
<td>29</td>
<td>Better control and prevention from State authorities</td>
<td>0</td>
</tr>
<tr>
<td>35</td>
<td>Reduction of value added tax (VAT)</td>
<td>+3</td>
<td>31</td>
<td>Simplification of mandatory analyses procedures at State a</td>
<td>0</td>
</tr>
<tr>
<td>59</td>
<td>Smaller margins on wine in HORECA</td>
<td>+3</td>
<td>32</td>
<td>Cheaper prices for mandatory analyses from state authority</td>
<td>0</td>
</tr>
<tr>
<td>69</td>
<td>Luck</td>
<td>+3</td>
<td>33</td>
<td>Change the domestic wine classification of wine: table/qua</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>Grants which are reached by simplified procedure</td>
<td>+2</td>
<td>34</td>
<td>Strengthening of Chamber of Agriculture to protect interes Top public relations</td>
<td>0</td>
</tr>
<tr>
<td>17</td>
<td>The work of the state to reduce unfair competition, inform</td>
<td>+2</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Greater purchasing power of consumers</td>
<td>+2</td>
<td>42</td>
<td>Development of new sales channels for my wine</td>
<td>0</td>
</tr>
<tr>
<td>25</td>
<td>That the state ceases to support the large market players</td>
<td>+2</td>
<td>52</td>
<td>Cheaper manual labor</td>
<td>0</td>
</tr>
<tr>
<td>48</td>
<td>The development of tourism in general and wine tourism in</td>
<td>+2</td>
<td>57</td>
<td>Simpler paperwork for exports</td>
<td>0</td>
</tr>
<tr>
<td>54</td>
<td>Cheap loans for investment</td>
<td>+2</td>
<td>4</td>
<td>Proper information on trends in the wine market</td>
<td>−1</td>
</tr>
<tr>
<td>55</td>
<td>Cheap loans for working capital</td>
<td>+2</td>
<td>5</td>
<td>The ability to expand my vineyards</td>
<td>−1</td>
</tr>
<tr>
<td>61</td>
<td>Shorter deadlines for payment of sold wine</td>
<td>+2</td>
<td>6</td>
<td>Cheaper planting material</td>
<td>−1</td>
</tr>
<tr>
<td>68</td>
<td>Good vintages in the row</td>
<td>+2</td>
<td>9</td>
<td>To hire top enologist - external expert</td>
<td>−1</td>
</tr>
<tr>
<td>1</td>
<td>Additional training in the technology of wine production</td>
<td>+1</td>
<td>20</td>
<td>National irrigation programs</td>
<td>−1</td>
</tr>
<tr>
<td>8</td>
<td>Cheaper raw materials for viticulture and enology</td>
<td>+1</td>
<td>23</td>
<td>Programs to prevent and compensate damages caused by game</td>
<td>−1</td>
</tr>
<tr>
<td>11</td>
<td>Government support</td>
<td>+1</td>
<td>38</td>
<td>Possibility for financial advisory services to reduce cost</td>
<td>−1</td>
</tr>
<tr>
<td>13</td>
<td>Free grants</td>
<td>+1</td>
<td>41</td>
<td>Additional training in the commerce, sales and exports of Join to association</td>
<td>−1</td>
</tr>
<tr>
<td>30</td>
<td>Inspection control of wine in the stores in order to prevent quality fraud</td>
<td>+1</td>
<td>44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Cheaper utilities and energy (water, electricity, gas, and other)</td>
<td>+1</td>
<td>45</td>
<td>join to Producer organization</td>
<td>−1</td>
</tr>
<tr>
<td>39</td>
<td>Top marketing</td>
<td>+1</td>
<td>46</td>
<td>Joint venture with other winemakers with aim to expand ass</td>
<td>−1</td>
</tr>
<tr>
<td>47</td>
<td>Branding my wine region</td>
<td>+1</td>
<td>60</td>
<td>To export the wine</td>
<td>−1</td>
</tr>
<tr>
<td>49</td>
<td>Geographical indication of wines and quality seals</td>
<td>+1</td>
<td>62</td>
<td>The development of sales over the Internet</td>
<td>−1</td>
</tr>
</tbody>
</table>

Table I. Descending Q-sort values for each statement of Perception 1 (First factor)
Most participants shared the view that the State is the one responsible for taking future care of the wine market and their prosperity. Interestingly, although cooperatives (43 – Join to cooperatives) have over 150 years' tradition in Croatia, there is still a negative attitude present today towards what cooperatives may offer. This (problematic) attitude is widely elaborated as the legacy of the socialist era (1945-1990). Q methodology may be used to further distinguish the complexity of this problem in Croatia or countries with a comparable history.

6. Conclusions, implications, limitations and future research
Analysis of a sample of 30 Croatian small winemakers revealed factors of their future prosperity. According to the obtained results, respondents share a diversity of both perspectives and concerns. Most important are: perceived threat from the import lobby (27),
<table>
<thead>
<tr>
<th>Problem area</th>
<th>PI</th>
<th>Q-SV</th>
<th>Z-scores</th>
<th>PI</th>
<th>Q-SV</th>
<th>Z-scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>(35) Reduction of Value Added Tax (VAT)</td>
<td>+3</td>
<td>1.661</td>
<td>(31) Simplification of mandatory analyses procedures at State authorities</td>
<td>0</td>
<td>0.083</td>
</tr>
<tr>
<td></td>
<td>(27) Cease of state support for import lobby</td>
<td>+3</td>
<td>1.657</td>
<td>(26) That the state ceases to support small market players</td>
<td>−3</td>
<td>−1.808</td>
</tr>
<tr>
<td></td>
<td>(17) The work of the state to reduce unfair competition, informal economy</td>
<td>+2</td>
<td>1.423</td>
<td>(21) National fire prevention programs</td>
<td>−3</td>
<td>−1.431</td>
</tr>
<tr>
<td></td>
<td>(14) Grants which are reached by simplified procedure</td>
<td>+2</td>
<td>1.155</td>
<td>(22) Highly subsidised foreign fair participations (by Chamber of Commerce or State)</td>
<td>−1</td>
<td>−1.070</td>
</tr>
<tr>
<td></td>
<td>(25) That the state ceases to support the large market players</td>
<td>+2</td>
<td>0.980</td>
<td></td>
<td>−1</td>
<td>−0.617</td>
</tr>
<tr>
<td></td>
<td>(13) Free grants</td>
<td>+1</td>
<td>0.754</td>
<td></td>
<td>−1</td>
<td>−0.493</td>
</tr>
<tr>
<td></td>
<td>(30) Inspection control of wine in the stores in order to prevent quality fraud</td>
<td>+1</td>
<td>0.960</td>
<td></td>
<td>−1</td>
<td>−0.607</td>
</tr>
<tr>
<td>Economy</td>
<td>(59) Smaller margins on wine in HORECA</td>
<td>+3</td>
<td>1.493</td>
<td>(53) Availability of automated grape harvesters</td>
<td>−3</td>
<td>−1.798</td>
</tr>
<tr>
<td></td>
<td>(48) The development of tourism in general and wine tourism in my area</td>
<td>+2</td>
<td>1.342</td>
<td>(50) Reliable information on foreign markets that will allow me to start or rise wine exports</td>
<td>−2</td>
<td>−1.062</td>
</tr>
<tr>
<td></td>
<td>(61) Shorter deadlines for payment of sold wine</td>
<td>+2</td>
<td>1.285</td>
<td>(57) Simpler paperwork for exports</td>
<td>0</td>
<td>−0.099</td>
</tr>
<tr>
<td></td>
<td>(55) Cheap loans for working capital</td>
<td>+2</td>
<td>1.088</td>
<td></td>
<td>−1</td>
<td>−0.730</td>
</tr>
<tr>
<td></td>
<td>(54) Cheap loans for investment</td>
<td>+2</td>
<td>1.071</td>
<td></td>
<td>−1</td>
<td>−0.709</td>
</tr>
<tr>
<td></td>
<td>(58) Marketing programs to increase the culture of wine drinking</td>
<td>+1</td>
<td>0.347</td>
<td></td>
<td>−1</td>
<td>−0.277</td>
</tr>
<tr>
<td>Technology</td>
<td>(1) Additional training in the technology of wine production</td>
<td>+1</td>
<td>−0.113</td>
<td>(10) To hire top enologist</td>
<td>−2</td>
<td>−1.056</td>
</tr>
<tr>
<td></td>
<td>(8) Cheaper raw materials for viticulture and enology</td>
<td>+1</td>
<td>−0.281</td>
<td></td>
<td>−1</td>
<td>−0.380</td>
</tr>
<tr>
<td>Sociology and climate</td>
<td>(68) Good vintages in the row</td>
<td>+2</td>
<td>1.485</td>
<td></td>
<td>−1</td>
<td>−0.380</td>
</tr>
<tr>
<td>Universal</td>
<td>(69) Luck</td>
<td>+3</td>
<td>1.999</td>
<td></td>
<td>−1</td>
<td>−0.380</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+1</td>
<td>0.960</td>
<td></td>
<td>−1</td>
<td>−0.380</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Problem area</th>
<th>P1</th>
<th>Q-SV</th>
<th>Z-scores</th>
<th>P1</th>
<th>Q-SV</th>
<th>Z-scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consensus statements (not distinguishing between any pair of factors)</td>
<td>(30) Inspection control of wine in the stores in order to prevent quality fraud</td>
<td>0</td>
<td>0.300</td>
<td>(23) Programs to prevent and compensate damages caused by game</td>
<td>0</td>
<td>0.220</td>
</tr>
<tr>
<td>P&lt;0.01/&lt;0.05</td>
<td>(32) Cheaper prices for mandatory analyses from state authority</td>
<td>0.120</td>
<td>0.986</td>
<td>(42) Development of new sales channels for my wine</td>
<td>0.120</td>
<td>0.986</td>
</tr>
<tr>
<td>Number of defining variables</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite reliability</td>
<td>0.986</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard error of factor Z-scores</td>
<td>0.120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** *Distinguishing statements for P1 at p < 0.01*

**Source:** Authors’ calculations, software PQMethod
level of Value Added Tax (35) which was at the time 25 per cent, wine margins at HORECA (59), luck (69), grants by simplified procedure (14), state effectiveness in reduction of unfair competition (17), purchasing power of consumers (19), continuation of state support (26) to small winemakers/cease of support for large market players (25), and payment delays (61) connected with poor business culture. All respondents have a strong will to stay in the business independently (High negative loading on statements 65, 64 and 63 – Table I), even though it appears that they distinguish major threats for their business, for instance: tax policy, import lobby, high prices in HORECA, dependence on the continuation of state support and unfair competition.

The perceived threat from the import lobby (colloquial catchphrase also aimed at explaining wine market disturbances in Croatia) and VAT level, implies a feeling of uncertainty for the wine business game in Croatia. VAT in Croatia occasionally raised from initial 22 to present 25 per cent, which inspired wine traders to search for bulk wine in EU and non-EU neighborhood. The decrease of wine margins in HORECA has already occurred with on-trade consumption rise and new pricing models besides the traditional one (price multiplied by three). The emphasized importance of luck (uncontrollable factor) in wine business suggests the potential for a separate research. The importance of obtaining grants by a simplified procedure implies the need for an immediate intervention into public administration procedures to create a direct opposite of the current situation. Along with information about complicated procedures for approving and administering grants, some information about potential conflict of interests and abuse of grants are easy to find in Croatia. The accent on unfair competition and state effectiveness in its reduction implies the urgency of legislation adjustment and greater agility of the inspection. The purchasing power of consumers implies challenges connected with respondents’ tendency to continuously produce premium quality wines at decent prices, which may or may not meet consumer expectations in future. The perceived importance of redistribution and focus of state support implicate a request for more effective governing models and business culture on both vertical and horizontal execution levels.

6.1 Implications
This research revealed that the chosen respondents have a similar point of view towards a significant number of administrative barriers and a lack of state efficiency in some matters. With the use of Q methodology, this research clarified the most important issues or revealed those that could/should be immediately addressed. In other words, the use of Q-methodology has distinguished what was crucial and what could be resolved immediately.

6.2 Limitations
The opinions of the respondents regarding any of the statements are not fixed and may be influenced in a very short time. Q methodology has no claim to be consistent by participants across time. This feature presents the weakness of Q methodology. Conclusions from a particular Q methodology case study should be used primarily as a guidepost when trying to clarify common perspectives by exploring subjective perspectives. There is always something that can be added to the Q-set, as the piloting process for the Q-set can never be really complete. Low correlation levels between respondents may point to a possibly oversized Q-set and that the number of possibly duplicated statements [12-13 (EU Funds/Free grants), 29-30 (Better control and prevention from state authorities/Inspection control of wine in the stores to prevent quality fraud), 18-58 (State assistance in increasing the culture of wine drinking/Marketing programs to increase the culture of wine drinking)] could be reformulated to reduce the Q-set to about 40-50.
6.3 Future research

The emphasized loadings on positive and negative statements reveal a significant potential for further analysis. A possible misunderstanding of the State role in the contemporary market economy and perception of the state support efficiency together with a study of consumer habits, open the space for targeting improvement in mutual communication plans. The inclusion of other user groups into research of such kind, e.g. large producers, would certainly state joint perception(s), i.e. extracted priorities for policy development of the whole sector.

It would be interesting also to analyze the results obtained from other respondent groups like big producers and compare their viewpoint with the one revealed in this paper. Q methodology indeed allows to focus on a range of viewpoints shared by a specific group of participants and to analyze it. It can be used as a practical, inexpensive and rapid “double-check” tool. Joint initiatives (such as regulations, strategies, operational programs and grants) are quite complex and susceptible to misunderstandings or disaffections between and within stakeholder groups. It is often ignored that the existence of commonalities even within extreme competing agendas and power differentials is present, and it should be effectively found and used for greater good. Consequently, this paper gives a practical example to scholars and policymakers how to effectively study the subject of particular interest to different stakeholder groups, and in this case, one of the target groups also.

References


Marić, L. (2009), “Domaći vinari zabrinuti jer je uvoz vina pterostruko veći od izvoza (domestic winemakers are concerned about five times bigger imports than exports of wine)”, available at: www.vecernji.hr/biznis/domaci-vinari-zabrinuti-je-uvoz-vina-pterostruko-veci-od-izvoza-41568


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Does innovation propensity influence wineries’ distribution channel decisions?

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**Abstract**

**Purpose** – The aim of this paper is to analyze the relationships between distribution strategies and the level of innovation propensity in the winemaking industry. It intends to identify the existence of patterns around the way wineries innovate and the way distribution channels are used. These determinants can support or constrain wineries’ behaviors in their strategic choices related to distribution channels.

**Design/methodology/approach** – The sample comprised 191 Italian small- to medium-sized enterprises in the wine industry. First, a two-step cluster analysis was used to identify patterns in the level of innovation propensity and differences in distribution channel strategies. Second, the research question was tested using multinomial logit regression.

**Findings** – Five clusters of innovation propensity were identified, varying from “no propensity to innovate” to “propensity for radical innovation”, and three clusters of distribution channel strategies were found. A significant negative relationship between innovation propensity and distribution channel strategies was revealed. This means that the greater the propensity to innovate, the smaller the need for a wholesale distribution option.

**Research limitations/implications** – As with most research, there are limitations to this study. First, the sample is from only one country. A second limitation is the sample size (191 Italian firms). A sample including large firms can be used to further validate the findings. Linked to the sample, another possible limitation is that all respondents were small- and medium-sized enterprises from a single industry.

**Practical implications** – This study contributes to the current innovation research by showing the existence of a negative relationship between innovation propensity and the choice of distribution channel in the wine industry. This knowledge is precious to entrepreneurs and managers in the wine sector, allowing them to better consider not only the type of strategies related to distribution channels but also the importance of building the firm’s propensity to innovate into the strategic decision-making process. Furthermore, the paper provides an opportunity for practitioners to reflect upon the fact that changing the distribution channel is more than just changing the outlet for their product; it might also require a revision in their innovation propensity to better facilitate the process.

**Social implications** – There are also social implications, in particular providing an advantage for consumers. The major advantage is based on the fact that consumers are now aware that the level of innovation propensity in a wine industry is directly linked to the type of distribution channel adopted. Therefore, wines with low-innovation propensity are most likely found to adopt wholesale distribution strategy, while the more innovative wineries adopt the wine expert and direct distribution channels.
Innovation propensity

1. Introduction

Recently, increasing interest has been directed to firms operating in traditional and low-tech industries such as the wine industry (Robertson et al., 2009; Crossan and Apaydin, 2010). Both academics and practitioners underline the necessity to constantly look for innovative products to address the ever-changing environment to which companies need to adapt (Dressler, 2013; Cusmano et al., 2010), and to effectively respond to innovation management challenges (Gilinsky et al., 2008). This paper aims to contribute to the current literature by investigating the relationships between firms’ innovation propensity and their strategic choices concerning distribution channels used by small- and medium-sized enterprises (SMEs) operating in the winemaking industry.

The wine industry is well suited for research on innovation management (Cusmano et al., 2010). A major marketing challenge for small wineries is the selection of distribution channels for wine sales, which are complex because of widely different social, cultural, economic and political patterns. Distribution channel management is an articulated, multidisciplinary and multi-organizational activity that requires appropriate strategies and policies to define a suitable portfolio of multiple alternative channels, interactions and collaborations within the supply chain (Baritaux et al., 2006; Hall and Mitchell, 2008; Ganesan et al., 2009). This has created extensive challenges for researchers and practitioners in the area of multichannel distribution (Konus et al., 2008).

Despite the importance of the issue, the literature on distribution channels in the wine sector is limited and heterogeneous in terms of the questions raised (Hollebeek and Brodie, 2009; Mueller and Remaud, 2011). This paper maintains that small wineries should be especially concerned with controlling the way in which innovation affects the management of distribution channels. The purpose of the paper is to identify the existence of patterns around the way SMEs in the wine industry innovate and the way distribution channels are used. These determinants can support or constrain the choices open to wineries of a distribution channel. Therefore, our research question is:

RQ. Does wineries’ innovation propensity influence distribution channel choice?

The research context is interesting because Italy has a long winemaking tradition and, with France and Spain, has the largest area planted to wine (Robinson and Harding, 2015). It represents “almost half of world production, but less than a third of world consumption” (Dal Bianco et al., 2013, p. 220). The Italian wine sector is characterized by a variety of terroirs, favorable climates, experience, and entrepreneurial spirit (Cusmano et al., 2010; Ndou et al., 2012). A number of striking features of the Italian wine industry differentiate it from that of other countries (Nosi, 2014). Its most distinctive features are the extreme fragmentation and heterogeneity of its firms. Average land area and production volumes are quite small and firms are often family run (Zanni et al., 2009). A total of 74 per cent of growers have no more than two acres of vineyards, and 81 per cent make less than 100hl of wine per year (Kispál and Takács, 2016). The average age of producers is quite low, with the
sole proprietorship form predominating, although a progressive move to more advanced legal forms is taking place in most companies. If the production chain as a whole is considered, producers outnumber bottlers (ISMEA, 2014). However, a recent Mediobanca (2016) report clearly shows that in the past 30 years the proportion of wine producers that are small producers has dramatically decreased.

Innovation in the Italian wine sector underlines the importance of marketing innovation as critical factor for industry’s growth and prosperity (Contò et al., 2014). For example, Fiore (2016) has analyzed the propensity of wine firms to innovate through the implementation of direct sales to achieve a competitive advantage. On the other side, Rouzet and Seguin (2004) highlight how many small businesses are present in various international markets, thus making multichannel distribution choices a necessary strategic option. For the Italian wine sector, this has led to in-depth restructuring in response to changes in both domestic and international markets (Cusmano et al., 2010).

To investigate the importance of these various options, a two-step cluster procedure has been chosen to identify the existence of patterns around the way winemakers innovate and the way distribution channels are used. We use Multinomial Logit Regression (MLR) to test the relationship between innovation propensity and distribution channels. All the analyses are based on a survey of 191 small to medium-sized wineries located in Italy.

2. Theoretical background

Commonly SMEs suffer from the “liability of smallness” (Parida et al., 2012), which relates to having a scarcity of financial resources that could impede participation in the intermediate distribution channel options. Another hurdle for SMEs in the wine industry is the lack of well-established brand reputation (Bouzdine-Chameeva, 2006) which is a strategic driver lead by market mechanisms (Bhaskaran et al., 2006; Dodds et al., 2013) and long-term relationships with distributors (Flint and Golicic, 2009; Korb and Wagner, 2016). Therefore, SMEs might be disadvantaged when competing against bigger and more renowned brands that have already gained an acceptable level of customer loyalty and have well-established relationships with suppliers. As Voelpel et al. (2006) observed, more and more winemakers are moving to strategies that tend toward an efficacious mix of knowledge and innovation. It is apparent that the growth of companies and the general reshaping of the wine industry (with the emergence of New World business models) largely rest on innovative practices. Even if the wine industry is an old and traditional industry, it has experienced a dynamic growth in the global context (Anderson, 2004) and has created high levels of competitiveness (Dana et al., 2013). All those changes offer new opportunities for wine producers but their exploit requires adequate capability to adapt commercial strategies to market conditions which are country-specific (Mora, 2006).

2.1 Innovation propensity

In the new competition arena, firms that invest in innovation such as wine standardization, processes optimization, certifications and cost reduction usually increase their competitiveness (Stasi et al., 2016). Despite this finding, there is a market dichotomy between Old World and New World producers grounded in a different approach toward innovation (Campbell and Guibert, 2006) so that innovation spurred by consistent investments and research efforts has played a prominent role in an emergence of New World producers in the international market (Giuliani et al., 2011). By contrast, for Old World “systems” to find the right strategy able to interpret and go along with market trends through the connection of tradition with innovation is not simple (Menghini, 2015). Wineries of the Old Word are more and more pushed to reshape themselves in terms of innovation.
without repudiating their origins and tradition – shifting toward the volatile demand and fierce competitors while offering different (tradition/typical) products (Vrontis et al., 2016).

As stated by Touzard (2010), the current study examines two approaches in the wine context: institutional analysis, that highlights the influence of technology and institutions on economic change in the industry (e.g. table wine vs appellation d’origine contrôlée [AOC] wine); and the analysis of innovation projects (e.g. launch a new wine, adopt a new technology) (Rebelo and Muhr, 2012). Innovation propensity can occur in different ways: innovation organization (Damanpour, 1991; Carayannis and Provance, 2008; Dobni, 2008; Temel et al., 2013), innovation service (Nijssen et al., 2006), innovation support process (Nijssen et al., 2006), innovation product (Nijssen et al., 2006), innovation process (Damanpour, 1991) and innovation e-commerce (Saba et al., 2017).

It is not so easy to understand why a firm is able to innovate when others cannot, despite working in the same industry, nation, or region. According to Carayannis and Provance (2008), cultural acceptance of innovation strengthens the necessary architecture and enhances an organization’s disposition toward innovation. So, understand the innovation phenomenon it is not enough to consider homogeneous firms that work in the same industry and have the same inputs, processes, or products. Teece (1981) emphasizes the specific competencies of firms. Other works instead point out the connection between performance results and a firm’s internal competences and capabilities (Penrose, 1959; Chandler, 1990; Nelson and Winter, 1982). The competences’ heterogeneity and internal resources generate opportunities to develop and produce innovation outcomes and, ultimately, competitive advantage (Barney, 1991).

To understand if the firms are able to create innovation it is necessary to consider their propensity to innovate, because “companies with a high propensity to innovate will develop and introduce more innovative new products and services than companies with a low propensity to innovate” (Nijssen et al., 2006, p. 243). The concept of innovation propensity provides a multi-perspective lens for exploring the notion of innovation, considering synonymous concepts such as innovativeness and organizational innovation (Temel et al., 2013). Innovation propensity has an influence on the innovativeness level of the new products/services developed and it also has an effect on the radicalness of new products/services. According to Dobni (2008), innovation propensity represents the degree to which an organization is inclined to achieve a state of innovativeness through the support of appropriate organizational architecture.

The concept of innovation propensity serves as a precursor to the notion of organizational innovation, which is broadly described as the adoption of a new idea or behavior by an organization (Damanpour, 1991). Consequently, the propensity of an organization to innovate assists in explaining the degree of innovativeness, and innovativeness within an organization reflects the firm’s fundamental openness to break away from established procedures (Kimberly, 1979). It follows that a firm’s innovation propensity can be examined via measuring the completed innovation activities (OECD, 1997).

Innovativeness, as a characteristic of a firm’s culture, promotes new solutions (Hurley and Hult, 1998) and determines the degree of openness to new ideas, processes, or products (Damanpour, 1991). It refers to the ability to connect previously unconnected ideas and knowledge or recombine previously connected ideas and knowledge in novel ways (Nahapiet and Ghoshal, 1998). Innovativeness is a notion of openness to ideas and, as a characteristic of a firm’s culture, promotes new solutions (Hurley and Hult, 1998) and determines the degree of openness to new ideas, processes, or products (Damanpour, 1991). Therefore, innovation propensity plays an important role in the different phases of the innovation process (McAdams and McClelland, 2002).
The r(evolution) in ICT has generated an innovation process to the agri-food sector that is far from being unwind (Saba *et al.*, 2017) changing the way to do business at all levels, and in particular the business-to-consumers (B2C) and business-to-business (B2B) models (Andreopoulou *et al.*, 2008). Considering the globalization phenomenon, there has been “a growing interest in the use of e-commerce as a mean[s] to perform business transaction[s] over the Internet” (Hasan and Herris, 2009, p. 92). Singh (2004) first stated that e-business innovation requires a change in the company culture, and secondly that it also provides strategic opportunities for firms to innovate and a justification to improve their business competitive advantage.

Finally, there are not only different innovation propensity ways to occur (Innovation Organization, Innovation Service, Innovation Support Process, Innovation Product, Innovation Process and Innovation E-commerce), but also each of them can be the result of the introduction of a new innovation (Radical Innovation) and/or the evolution of an existing one (Incremental Innovation). Despite the fact that distinctions between types of innovation is not always clear, it has been argued that radical innovations seems to remove much of the existing firms’ accumulated technical knowledge and production techniques and substitute them with new one to better support the new innovative goal (product, process, etc.) and incremental innovation (Robertson *et al.*, 2012). Consequentially, incremental innovations include any innovations that are not discontinuous or radical and therefore that includes substantial changes to existing activities (Robertson *et al.*, 2012).

2.2 The distribution channels of the wine industry

Ganesan *et al.* (2009) underline that “multichannel routes to market” are a major trend changing the retail landscape, suggesting that disaggregation is the most important phenomenon in the retailer value chain. Bucklin (1966) explains the role of retailing as the way by which a company can accomplish product delivery at the right time, to the right place, and with the right quantity at a minimum cost. Specifically, managers face a significant challenge to identify their products’ most efficient routes to end-users due to the large number of existing distribution channel types and the broad range of possible channel configurations (Kauferle and Reinartz, 2015).

The choice of distribution channels requires a set of strategic decisions (Rosenbloom, 2007) that should consider the product’s characteristics (Miracle, 1965), innovation, and changes in the business environment (Watson *et al.*, 2015).

Two decisions appear more relevant for the purposes of this study: the intermediary type and the distribution intensity. The first is related to the choice of the intermediary type; that is, direct sales force and wholesaler; the second concerns how many intermediaries to include and the number of levels in a channel structure. These decisions are strategic because they are able to dictate the channel structure, influencing market coverage and the kind of distribution (direct or indirect) (Coughlan *et al.*, 2006).

There are various distribution channels available to wine producers for selling wine that can be used to enhance profitability (Hall and Mitchell, 2008). Wine producers are faced with a complex choice about how they sell their wine and must consider issues of sales volume, price sensitivity, and brand perceptions (Szolnoki and Hoffmann, 2014). Therefore, it is paramount for wineries to understand the distribution options available, as well as the implications and opportunities of each sales channel (Gurau and Suquesnois, 2008).

Indirect wine distribution is the segment of the wine supply chain in charge of wine transfer from wineries to actors delivering wine to consumers. As such, the indirect channels may be short (manufacturer–retailer–consumer) or long (manufacturer–wholesaler–retailer–consumer) (Pomarici *et al.*, 2012). The main difference between these two types of
indirect channels is the degree of distance between the manufacturers (wineries) and the consumers, with the long indirect channels entrusting more the intermediaries with responsibilities to build relationship with the consumers (Pomarici et al., 2012). Known as retailers who join the first level of contact, they are wholesalers of two distinct typologies: packaged wine sellers and commercial operators who buy loose wine to resell under their own label. The final objective is to deliver value to the product and to build a relationship with consumers.

Conversely, restaurants, wine stores, and hotels characterize the short channel (producer–retailer–consumer) (Danielis et al., 2010). These are examples of places where the consumption of wine takes place outside the home, and are characterized by the fact that here the consumers satisfy their needs for experimentation, variety and are offered innovation and higher value. These channels are characterized by high dynamism and represent a significant outlet for the industry and, at the same time, are a major vehicle of communication for the market.

The direct distribution of wines is defined as the selling of wine to individual customers, without using intermediaries (Viniflor, 2006). The definition covers the selling of wine to residents and tourists directly on the farm (“selling in farm”) or through direct networks (“directly to customers”). Regarding this last option, e-commerce has upended the traditional way of doing business, including the areas of purchasing, shopping, and selling directly via online shops and platforms (Bruwer and Wood, 2005; Festa et al., 2016). However, “while the proliferation of these sites is impressive, profitability remains elusive and sustainable business models are not yet well established” (Ma, 2017, p. 2). Morard and Simonin (2016) suggested that “the online market is developing slowly” (p. 410) and the main reason behind this slow growth in the wine industry was due to the challenge in persuading customers to buy wine online. In addition to the multiple channels described, usually a part relatively consistent of the wine’s production is utilized for other activities that it can still consider as marketing activities to support the wine company’s reputation and sales. Examples include: free wine tasting, festivals, and sponsorships (concerts, sports events, etc.).

Due to the complexity of the wine distribution system, wineries have to identify and implement strategies to gain access to channels and to continue to have distributor support to move the product at the retail level, where it can become available to consumers. It follows that grouping wineries according to their distribution channel strategies is an option that can lead to several insights for wine SMEs.

3. Method
3.1 Sample and data collection
To answer the research question, a survey targeting SMEs in the wine sector in Italy was drawn up and conducted between April and June 2015. The target group was chosen based on data provided by the Italian business database AIDA[1]. Firms classified according to ATECO 2007 and NACE Rev.2 as wine sector firms were included[2][3]. The ATECO code used was “grape growing” (code 0121), including firms involved in wine production and related businesses. Targeted firms were SMEs in the wine industry with fewer than 250 employees. Therefore, in this study the participant firms are referred to as wineries and/or SME interchangeably. Once a comprehensive list of SME in the wine industry had been identified, each firm’s product profile was reviewed and their inclusion in the final list was verified. This resulted in an initial list of 2,130 firms that, after carefully screening for the validity of the demographic information available and removing missing data, ended up in a final list of 811 firms and related email addresses. A self-administered questionnaire was subsequently drawn up, adapting items from previous research (Ceci et al., 2014).
To enhance external validity, the survey design was supported by interviews with six chief executive officers (CEOs) of SMEs and three academics. These interviews, which lasted 40-90 min each, helped to clarify key concepts and verify the transparency of metrics utilized in this work. These interviews led to some minor changes being made to the questionnaire. This was sent by email to 811 firms’ CEOs and management, with a letter explaining the purpose of the research. A target of a minimum number of 180 participants was set. These calculations were based on a 7 per cent margin of error and a 95 per cent confidence level. Ultimately, 191 surveys were completed. The response distribution rate was 23.55 per cent. Respondents were 36 per cent business owner, 24 per cent Senior Managers and 40 per cent administrative staff. In addition 32 per cent of the firms involved in the study produced annually less than 20,000 L, 30 per cent between 20,000 and less than 100,000 L and the remaining over 100,000 L.

3.2 Measurement of variables
The measures were developed on the basis of theory and studies as introduced earlier. Innovation propensity was measured by asking the respondents about their propensity to innovate (none, incremental or radical) for any of six innovation activities: innovation service (Nijssen et al., 2006), innovation organization (Damanpour, 1991; Carayannis and Provance, 2008; Dobni, 2008; Temel et al., 2013), innovation support process (Nijssen et al., 2006), innovation product (Nijssen et al., 2006), innovation process (Damanpour, 1991) and innovation e-commerce (Singh, 2004; Saba et al., 2017). The study used a three-year time span, as suggested by the OECD-EUROSTAT (OECD, 1997), due to the fact that innovation is a time-dependent process. In relation to measuring distribution channels, nine items were created based on the review of the literature. In the group of distribution channels, different type of channels have been taken in consideration from a more direct distribution involving activities (like selling directly to customers such as selling in farm, e-commerce and other activities) to less directed channels (but still short channel) such as boutique wine stores, wine-bar, restaurants and hotels. Finally, indirect channel (wholesalers) characterized by the highest distance between wineries and the consumers.

3.3 Data analysis overview
The survey data were analyzed in several ways to answer the research question. First, to create groups of wine SMEs with homogeneous behaviors, six items about innovation and nine items about distribution channels were used in two separate cluster analyses (two-step method) to better understand patterns in relation to wineries and their approach to innovation and to their distribution channel preferences. As this is an exploratory study, no a priori number of clusters was expected; different cluster solutions were tested empirically and theoretically. A five-cluster solution for the innovation approach (Table I) and three-cluster solution for the distribution channels (Table II) were chosen due their strong internal consistency and significant external differences.

Secondly, MLR was used to examine the association between distribution channels and innovation propensity. This procedure was chosen as the dependent variable has three unordered categories (1 = wine expert, 2 = direct distribution, 3 = wholesale distributor). The model included one categorical covariate: innovation propensity (1 = no innovators, 2 = incremental innovators service + organization, 3 = incremental innovators support process, service and organization, 4 = radical product and incremental organization, 5 = radical innovators). The MLR examined the odds ratio between the three categories of Y (distribution channels) for a 1-unit increase in our covariate or X variable.
<table>
<thead>
<tr>
<th>Clusters</th>
<th>No innovators</th>
<th>Incremental innovators</th>
<th>Incremental innovators</th>
<th>Radical Product and</th>
<th>Radical innovators</th>
<th>ANOVA sig 0.00 Scheffé analyses: significant differences between clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>03% (25)</td>
<td>24% (46)</td>
<td>21% (40)</td>
<td>20% (36)</td>
<td>23% (44)</td>
<td>1 &gt; 3; 1 &gt; 4; 1 &gt; 6; 2 &gt; 4; 2 &gt; 6; 1 &gt; 3; 1 &gt; 4; 1 &gt; 5; 2 &gt; 3; 2 &gt; 4; 2 &gt; 5; 3 &gt; 4; 3 &gt; 5; 4 &gt; 5;</td>
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<tr>
<td>Innovation service</td>
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<td>1</td>
<td>1</td>
<td>0</td>
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<td>1 &gt; 3; 1 &gt; 4; 1 &gt; 6; 2 &gt; 4; 2 &gt; 6; 1 &gt; 3; 1 &gt; 4; 1 &gt; 5; 2 &gt; 3; 2 &gt; 4; 2 &gt; 5;</td>
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<tr>
<td>Innovation organization</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1 &gt; 3; 1 &gt; 4; 1 &gt; 6; 2 &gt; 4; 2 &gt; 6; 1 &gt; 3; 1 &gt; 4; 1 &gt; 5; 2 &gt; 3; 2 &gt; 4; 2 &gt; 5;</td>
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<tr>
<td>Innovation support</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
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<td>1 &gt; 3; 1 &gt; 4; 1 &gt; 6; 2 &gt; 4; 2 &gt; 6; 1 &gt; 3; 1 &gt; 4; 1 &gt; 5; 2 &gt; 3; 2 &gt; 4; 2 &gt; 5;</td>
</tr>
<tr>
<td>Innovation product</td>
<td>0</td>
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<td>2</td>
<td>2</td>
<td>1 &gt; 3; 1 &gt; 4; 1 &gt; 6; 2 &gt; 4; 2 &gt; 6; 1 &gt; 3; 1 &gt; 4; 1 &gt; 5; 2 &gt; 3; 2 &gt; 4; 2 &gt; 5;</td>
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<tr>
<td>Innovation process</td>
<td>0</td>
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<td>1 &gt; 3; 1 &gt; 4; 1 &gt; 6; 2 &gt; 4; 2 &gt; 6; 1 &gt; 3; 1 &gt; 4; 1 &gt; 5; 2 &gt; 3; 2 &gt; 4; 2 &gt; 5;</td>
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<tr>
<td>Innovation</td>
<td>0</td>
<td>0</td>
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<td>1 &gt; 3; 1 &gt; 4; 1 &gt; 6; 2 &gt; 4; 2 &gt; 6; 1 &gt; 3; 1 &gt; 4; 1 &gt; 5; 2 &gt; 3; 2 &gt; 4; 2 &gt; 5;</td>
</tr>
<tr>
<td>E-commerce MANOVA</td>
<td>F = 1412.07 Sig. 0.000</td>
<td></td>
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</tbody>
</table>
Stata version 14.1 with the SPost MLR post-estimation macro was used to run the MLR procedures (Long and Freese, 2006). Covariate significances were indicated by running the likelihood and the Wald test statistics. The critical independence of the irrelevant alternatives (IIA) assumption for the MLR model was tested with the Small-Hsiao test. The McFadden $R^2$ statistics is reported by Stata as it is a default test of model fit (Long and Freese, 2006).

4. Findings

Results of the two-step cluster analyses performed on five desired clusters for the innovation activities, and three desired clusters for the distribution channels, are shown independently in Tables I and II. The first part of the internal validity analysis of the five clusters and the three clusters was to validate the significance of the degree of external heterogeneity between them. The Multivariate Analysis of Variance (MANOVA) showed that the five clusters representing the different innovation styles were significantly different ($F = 1412.07, p < 0.000$), and that the three clusters representing the different distribution channel options were also significantly different ($F = 240.465, p < 0.000$). Variations in dimensions of the six items for the five clusters and the nine items among the three clusters were gleaned from the Analysis of Variance (ANOVA), as summarized in Tables I and II. Scheffe tests highlighted the distinguishing qualities of the five and three clusters. In reviewing the profiles of the five clusters (Table I) and the three clusters (Table II), it should be noted that, because the number and content of clusters were inseparable from the classification criteria used, the results of the ANOVA are presented only to illustrate where the greatest differences existed among the clusters. The second part of the validation was to measure the degree of agreement (internal homogeneity) inside each cluster. The results of the application of the degree of inter-rater agreement within each of the three clusters are as follows: Cluster 1 = 0.94, Cluster 2 = 0.95 and Cluster 3 = 0.98. James et al. (1984) measure the degree of agreement between each member within a cluster, where 0 = no agreement and 1 = total agreement.

The results of the five clusters are between 0.94 and 0.98, which indicates very high internal agreement results. Firms within each of the five clusters have very strong
agreement regarding their choice of distribution channels and the different types of workplace engagement activities they pursue.

The likelihood ratio (LR) and the Wald test statistics both showed that innovation propensity is significant in the MLR model. The LR and Wald test statistics were $\chi^2(2) = 69.97, p = 0.00001$; $\chi^2(2) = 37.03, p = 0.00001$. The Small-Hsiao test for the IIA assumption was non-significant, indicating that the odds across the three $Y$ categories (with each category represented as $J$) are independent of other alternatives (the IIA assumption was supported: $J = 1 \chi^2(2) = 3.27, p = 0.19; J = 2 \chi^2(2) = 1.27, p = 0.53; J = 3 \chi^2(2) = 0.96, p = 0.62$). The measurement of fit was high considering there is one covariate, $R^2$ value = 21 per cent.

The odds of using a wine-expert distributor ($J = 1$) or a direct distribution channel ($J = 2$) relative to a wine-wholesaler distributor ($J = 3$) are 6.2 times greater and 4.4 times greater respectively for a unit increase in innovation propensity ($p < 0.001$ in both instances). The odds of using a wine-expert distributor ($J = 1$) relative to a direct distribution channel ($J = 2$) is 40.1 per cent greater for a unit increase in innovation propensity, although this odds ratio is not statistically significant ($p = 0.67$); nevertheless, the odds percentage is high. To summarize, the MLR model clearly highlights that the increasing levels of innovation propensity use either a wine-expert or direct channel of distribution, over a general wholesaler channel. There is some evidence from the elevated odds ratio and odds percentage values that, as innovation propensity increases, wine experts are favored over direct distributors.

5. Discussion

This section discusses the results of the cluster analysis and the MLR. The results of the first cluster analysis underlined the existence of five different typologies of wineries (clusters) in relation to innovation activities (Table I), supporting the already well-known innovation literature regarding the existence of different types of innovations (Schumpeter, 1934).

Based on the results on Table I representing five unique patterns of innovation propensity demonstrated by SMEs in the wine industry in Italy toward the six innovation activities tested in this study, the five clusters have been named as followed: no innovators (Cluster 1), incremental service and organizational innovators (Cluster 2), Incremental innovators support process, service and organization (Cluster 3), radical product and incremental organizational innovators (Cluster 4) and radical innovators (Cluster 5).

The smallest cluster is the “no innovators” cluster. This result is in line with the current literature, suggesting that despite its traditional vocation, the wine industry is highly innovative (Doloreux et al., 2013; Doloreux and Lord-Tarte, 2014). Furthermore, the equal distribution of firms between the remaining four clusters suggests that the propensity to innovate covers all aspects of a winery’s operations. In this sense, wineries tend to introduce different types of innovation, including product and process innovation, as well as organizational innovation. This is in line with Dressler’s (2013) results, which highlight how wineries actively pursue innovation in all relevant dimensions and show diverse and intensive innovation portfolios.

In addition, this study discovered three unique patterns (clusters) of distribution channels that SMEs in the wine industry can strategically adopt (Table II): wine-expert channel (Cluster 1), direct distribution channel (Cluster 2), and wholesale channel (Cluster 3). The firms using the wine-expert channel consistently rate higher than all the others on choosing both restaurants and wine stores as main distribution strategies. Wine-bars are also important, while wholesalers are moderately important. Different from the previous
cluster, SMEs that are part of the direct distribution are keener to sell directly inside the firm (18 per cent) and to sell to the public and to other firms (13 per cent). Direct sales can be considered an entrepreneurial strategy and a crucial tool to reach and to achieve a competitive advantage (Tudisca et al., 2015). In fact, direct sale has several opportunities for the firms such as to retain a greater final value added, to enhance the quality of the products, to improve the network of relations, and to re-evaluate its social role, with positive effects for the community (Contò et al., 2014).

With the highest percentage of all, wineries in the wholesale cluster prefer to use intermediaries (wholesalers) as a primary channel (47 per cent), and not to sell directly to the public.

The study has proven that the type of innovation propensity affects the choice of distribution channel in the wine industry. Furthermore, it revealed a negative relationship between the innovation propensity clusters and distribution channel clusters (Table III). This means that with an increase in innovation propensity (Table I) there is a decrease in the use of the corresponding distribution channel to Cluster 3 (Table II). In other words, the more SMEs in the wine industry are inclined to innovate (radical innovators), the more they opt for either wine-expert channel or wholesale channel. Conversely, the “no innovators” cluster prefers the wholesale channel.

An important result from this study is that the greater the innovation propensity, the more the SMEs in the wine industry opts for the most direct distribution channel strategy. As argued by Paksoy et al. (2012, p. 2822), “distribution channel management not only consists of choosing distribution channels. In fact, probably the most difficult phase of the distribution management starts after this choice”. This means that innovation propensity can support firms to smoothly move around the different options because it gives them a more flexible approach to select and manage distribution channels.

6. Conclusions
This study aimed to provide an organic picture of the role of innovation and its relationship with distribution channel strategies in Italy’s winemaking industry. A two-step cluster analysis was used to identify the existence of patterns concerning the way SMEs in the wine industry innovate and the way distribution channels are used. MLR was used to ascertain if innovation propensity influences the choice of distribution channel in the wine industry.

In conclusion, the answer to the research question, “Does wineries’ innovation propensity influence distribution channel choice?” is “YES”. There is strong evidence from the MLR model that as the level of innovation propensity increase, so too does the choice for either the wine-expert and/or direct channels of distribution, over that of the general wholesaler (Table III). Even considering the limitation related to the sample size, there is some evidence from the elevated odds ratio and odds percentage values indicating that as innovation propensity increases, wine experts are favored over direct distributors.

| Y categories | b   | z    | p > |z| | e^b | e^bStdX (%) | (%) | StdX (%) |
|--------------|-----|------|-----|----|-----|-----------|-----|---------|
| 1 vs 2       | 0.34| 1.84 | 0.067NS | 1.40| 1.56| 40.1      | 55.7|         |
| 1 vs 3       | 1.83| 7.78 | 0.00 | 6.22| 11.01| 521.6     | 1001.2|        |
| 2 vs 3       | 1.49| 5.09 | 0.00 | 4.44| 7.07 | 343.8     | 607.4|         |

Note: \( R^2 = 0.21 \) or 21%
The consolidation of distribution, at both the wholesale and retail levels, has had a major effect on competition in the wine market (Gwyne, 2008). This consolidation among distributors has made it increasingly difficult for smaller producers to get their wines onto the shelves. Wholesalers and supermarkets prefer to stock only the top-selling brands, at the expense of small and new labels. This sales strategy is damaging wine industries such as Italy’s, which is characterized by small, often micro, wineries with an extraordinarily rich variety of vines, and which enter markets with wines sold under a myriad of different labels (Cusmano et al., 2010). It follows that to contrast this situation, wineries – among all the SMEs – have to be able to develop an organizational culture based on innovation propensity (Sharifirad and Ataei, 2012), which will allow for more careful strategic decisions on distribution channels and generally more focused investments in innovation.

From literature, emerge the originality of this work, considering that no previous work analyzed specifically the relationship between innovation propensity and distribution channels. Nevertheless, considering the results of this study and those of Fiore (2016), it is possible to understand the necessity for the wine makers to define and reach an adequate equilibrium between innovation propensity and distribution channels (direct sales) to achieve a competitive advantage. This may require a restructuring of the strategic management for the winemakers that, according with Cusmano et al. (2010), should consider also the changes required by both domestic and international markets.

7. Practical implications, limitations and future research
This study contributes to the current innovation research by showing the existence of a negative relationship between innovation propensity and the choice of distribution channel in the wine industry. This knowledge is precious to entrepreneurs and managers in the wine sector, allowing them to better consider not only the type of strategies related to distribution channels, but also the importance of building the firm’s propensity to innovate into the strategic decision-making process. Furthermore, the paper provides an opportunity for practitioners to reflect upon the fact that changing the distribution channel is much more than just changing the outlet for their product; it might also require a revision in their innovation propensity to better facilitate the process.

There are also social implications, in particular providing an advantage for consumers. The major advantage is based on the fact that consumers are now aware that the level of innovation propensity in a wine industry is directly linked to the type of distribution channel adopted. Therefore, wineries with low-innovation propensity are most likely found to adopt wholesale distribution strategy, while the more innovative wineries adopt the wine expert and direct distribution channels.

Finally, from the findings political implications also arise. For example, problems of competitiveness of Italian wines in the international market still linger, e.g. unknown brands, inadequate positioning, ineffective communication, and strong intermediaries (Federvini, 2016). To intervene in the growth of internationalization of the wine market, policy-maker has to support winemakers in developing innovation activities and propensity. A way to do that should be to invest on nurturing local clusters through knowledge-transfer from external sources to intra-cluster firms, and knowledge-centered links and networks among clustered firms themselves. Those strategies should include improving viticulture and oenological techniques and management, high-level training, and technology transfer.

As with most research, there are limitations to this study. First, the sample is from only one country. A second limitation is the sample size (191 Italian firms). A sample including large firms can be used to further validate the findings. Linked to the sample, another possible limitation is that all respondents were SMEs from a single industry. Comparing the
results of this study with other agricultural industries (such as olive oil) can also provide a deeper overview of the so-called “traditional” sectors. Future research could also test the same model in a different country; that is, compare the so-called “Old World Wine” industry and “New World Wine” industry.

Notes

1. AIDA (Analisi Informatizzata delle Aziende Italiane), is an Italian Digital Database of Companies that contains comprehensive information on companies in Italy, with up to ten years of history

2. ATECO (ATtività ECOnomiche) is an Italian Classification of Economic Activity adopted by ISTAT (Istituto Italiano di Statistica), the Italian National Institute of Statistics

3. RACE (from French, Nomenclature statistique des activités économiques dans la Communauté européenne) is the statistical classification of the economic activities in European communities.

References


Further reading

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Do implicit and explicit attitudes explain organic wine purchase intention?  
An attitudinal segmentation approach  
Francisco Sarabia-Andreu  
Universidad Catolica San Antonio de Murcia, Murcia, Spain, and  
Francisco J. Sarabia-Sánchez  
Department of Economic and Financial Studies,  
Universidad Miguel Hernandez de Elche, Elche, Spain  

Abstract  

Purpose – The purpose of this paper is to recognise the role of implicit and explicit attitudes on organic wine purchase intention and to segment consumers using these variables.  

Design/methodology/approach – The authors conducted a two-part Web survey (n = 690) in Spain: an Implicit Association Test followed by a questionnaire on explicit attitudes, purchase intention and demographic data. Validity and reliability of these attitudes are contrasted using confirmatory factor analysis, attitude relationships with purchase intention using multiple linear regression analysis, and segments using k-means cluster and discriminant analyses.  

Findings – The authors improve the measurement of explicit attitudes explaining organic wine purchase intention. Only attitudes towards intrinsic attributes and arousal feelings significantly explain purchase intention. Two attitudinal segments are detected, one showing moderate purchase intention with high explicit attitudinal levels and high consumption of organic wine and the other showing low levels of purchase intention and explicit attitudes, consuming mainly conventional wines. Neither segment shows any relevant differences in implicit attitudes.  

Practical implications – The analysis offers information on attitudes that contribute to explain Spanish consumer purchase intention in a wine sector notable for focusing more on making quality products than by knowing its market.  

Originality/value – The authors offer deeper understanding of the influence of attitudes on organic wine purchase intention. This paper also presents an attitudinal segmentation of consumers.  

Keywords Market segmentation, Wines, Attitudes, Purchase intention, Marketing research, Organic wine  

Paper type Research paper  

Introduction  
For quarter of a century, an ecologic mainstream trend has managed to institutionalise sustainable food objectives and organic agriculture movements in many countries (Adams, 2016). The need to monitor the quality of this type of production has meant that this industry is strictly regulated and monitored (Sachs, 2016) and yet the number of hectares
Two situations need consideration. First, the literature highlights the fact that consumers are purchasing more OW, but have difficulties choosing and buying it (Corduas et al., 2013), due to lack of information (Szőlnoki, 2013), because they are unsure what constitutes OW (Rogers, 2011) or because they do not know about the different types of OW (Delmas and Grant, 2014). Furthermore, the wine industry has mainly focused on technological innovation, quality and distribution, and has failed to target consumers. It is hardly a secret that many producers consider they do not need to focus on marketing (Haros, 2016).

Currently, market saturation and the inefficiency of classical promotional instruments have led to the emergence of a consumer-oriented approach. Private (Organic Trade Association, 2016) and academic studies have been conducted with in-depth descriptions of the role of demographic and psycho-graphic variables (e.g. values, perceptions) on OW purchase behaviour. The point is that the offer can be differentiated not only by aspects of production and technology but also through understanding consumer perceptions, expectations and preferences in terms of brand recognition, quality and product type, among others (Locksin and Corsi, 2012).

Attitude is a fundamental aspect of consumers and may represent either an obstacle (if it is negative) or an advantage (if it is positive) for marketers. From the consumer perspective, attitudes are precursors of purchase intention and behaviour (Kim and Hunter, 1993), and so there is a need to know what attitudes may have more influence on purchase intention as a proxy for actual behaviour. In recent years, there has been a major academic effort to analyse the influence of attitudes in the area of organic food (Rahnama, 2016; Rana and Paul, 2017) and to analyse the characteristics and preferences of wine consumers (Menghini, 2015). To the best of our knowledge, however, there has been little focus on OW (Barber et al., 2009; Barber, 2012). In addition, all these studies focus on declared attitudes and have not considered the possible impact of implicit (unconscious) attitudes (Greenwald and Banaji, 1995), or their potential interest for segmenting the market.

This work therefore aims to analyse the influence of implicit and explicit attitudes on OW purchase intention. The study also examines whether these variables can segment consumers to obtain attitudinal typologies. The work is structured in four parts. First, we discuss the relationship between attitudes and purchase intention, differentiating between implicit and explicit attitudes. Second, we describe the methodology, the sample and the measurements. Third, we present the quantitative analyses. Finally, we discuss the findings and propose future lines of research.

Literature review

Purchase intention and consumer attitudes

Purchase intention is widely used by marketers when making marketing decisions (Morwitz, 2012) because it can be a good predictor of individuals’ behaviour (Morrison, 1979; Chandon et al., 2005), of sales (Morwitz et al., 2007) and of the potential demand for new products (Silk and Urban, 1978). From a general point of view it can be understood as a consumer’s proneness to purchase a product and subjective tendency to choose a specific brand or product category (Mullet and Marvin, 1985). Classic models of consumer behaviour indicate that purchase intention appears after alternatives have been evaluated, generating a set of deliberate predispositions. Thus, in deliberate purchases, purchase intention is the result of a “conscious plan to make an effort to purchase” (Spears and Singh, 2004, p. 56), and attitudes are one of its main drivers (Fishbein and Ajzen, 1975).
However, purchase intention may also arise in spontaneous or unplanned purchases (Baumgartner, 2002). This spontaneous purchases are non-routine, casual and impulsive, whereas deliberate ones are thoughtful, routine or with a specific motivation (e.g. hedonic, symbolic). In spontaneous purchases, purchase intention is generated without a prior plan or when the consumer’s self-control depletes and is seen as the likelihood of purchase associated with an emotional drive (Muruganantham and Bhakat, 2013). Nonetheless, Krishna and Strack (2017) have recently noted that this exclusionary dichotomy is simplistic because the underlying mental processes interact with each other.

Attitudes are fundamental for understanding consumer decision-making processes. They refer to a set of beliefs, cognitions, experiences and emotions that reflect the evaluation of a stimulus (product, idea, person or event) and correspond to a complex psychological construct, part of the associational networks generated by the human mind (Fazio, 1986). They are important because they have a strong impact on behaviour; they feed off it and, in addition, act as mediators in the relationship between other variables (e.g. brand comprehension, environmental concern) and purchase intention.

Although there are various attitudinal types, here we consider implicit and explicit attitudes in relation to the type of mental associations they capture (Samson and Voyer, 2012), which are not exclusionary. Several studies have found that both types of attitudes can help to predict and influence different types of behaviour (Gattol et al., 2011; Zanna, 2004).

**Differences between implicit and explicit attitudes**

Classical theories on behaviour include attitudes as fundamental drivers. The most commonly used theories in the area of marketing and business are the social cognitive theory (Bandura, 1977) and the theory of planned behaviour (Ajzen, 1985; Ajzen and Madden, 1986). According to social cognitive theory, behaviour interacts with attitudes and the environment whereas in the theory of planned behaviour, attitudes combine with subjective norms and perceived behavioural control, which are considered to be direct predictors of purchase intention. These and other classical theories are based on a rationalist approach and also include emotions, beliefs and motivations. According to these theories, attitudes stem from cognitive processing and are obtained by conscious self-declaration.

In the mid-1990s, from a socio-psychological approach, Greenwald and Banaji (1995) introduced the concept of “implicit attitude” to deal with two weaknesses in the aforementioned classical theories on attitudes:

1. It does not seem correct to consider that people have to be aware of their attitudes for them to affect their behaviour.
2. Cognitive models usually have a low predictive capability of attitudinal change due to a conflict between explicit attitudes and unconscious or implicit attitudes.

This conflict appears, for example, in situations of change (examples: giving up smoking, using organic products rather than the usual conventional ones or changing habits for sustainability). The point is that there can be a gap between the declared predisposition to act and the predisposition actually felt.

From this socio-psychological approach, implicit attitudes are associations that activate automatically, and are not under consumers’ direct control as they are not understood to be a clear direct expression of their inclination to act or evaluate (Greenwald and Banaji, 1995). In contrast, explicit attitudes imply a rationalised association controlled by a conscious appraisal process. They are formed deliberately and are more easily self-reported than implicit attitudes. Perugini (2005) points out that “models of decision making within the
deliberative approach have shown robust predictive power for a range of behaviours” (p. 31), and so explicit attitudes play a significant, but not absolute role, in decision-making and consequently, in intention to act.

Some authors have pointed out that distinguishing between the two processes does not necessarily imply the existence of different attitudinal constructs (Fazio and Olson, 2003) because both attitudes refer to consumers’ associational evaluations of an attitude object (Böhm and Dickel, 2011). An example of this is that consumers could reject wine drinking because wine is alcoholic (negative attitude) but at the same time, prefer OW to conventional wine (positive attitude) because it affords greater protection of the environment. As Panzone et al. (2016) point out, these types of evaluations are important in products related to environmental sustainability. However, there are differences between implicit and explicit associations because affective priming (Fazio, 2001) has more impact on implicit ones. Moreover, neurological processes underlying explicit and implicit attitudes seem to be different. Thus, explicit attitudes are more closely associated to the activation of the prefrontal cortex area of the brain (involved in generating cognitive associations and decision-making) whereas implicit attitudes are more closely associated to the activity of the amygdala (involved in processing and storing memories related to emotional events) (Stanley et al., 2008). The processes, however, are not exclusionary here either, whereas the amygdala recognises emotions, threats and rewards, the prefrontal cortex analyses the information received the amygdala and regulates it cognitively (Salzman and Fusi, 2010).

The stimuli consumers receive (visual, textual and auditory) can be processed explicitly and implicitly. Explicit written or visual information (e.g. labels, type of wine, information on the internet, shelf display information) is consciously processed, evaluating and generating thoughtful willingness to act. Whereas information which operates implicitly (e.g. Country of origin, “who recommends what type of wine”) involves tacit processing and unintentional association with experiences and emotions introduced in individuals’ attitudinal responses without them noticing.

In short, consumers tend to process explicitly, but part of the information received also generates implicit attitudes (Schmidt et al., 2016) through unconscious associations. The acknowledged universal influence of explicit attitudes is joined by the confirmation that implicit attitudes can also be effective for predicting purchase intention (Vantomme et al., 2005) and behaviour itself (Perugini, 2005).

Method
Data collection and sample
Our target population are residents in Spain between the ages of 18 and 70 with Spanish as their mother tongue. Our team of interviewers had to solicit answers to a Web questionnaire from people who fulfilled specific characteristics. To avoid self-selection bias due to the category of product analysed, the interviewers only mentioned that they were looking for people to collaborate in a university study with an average estimated duration of 9 min.

The interviewers contacted potential interviewees personally or through social networks and used a check list to determine which individuals could not participate for operational or ethical reasons. People with:

- motor problems in an upper limb;
- a strong tendency to consume alcoholic drinks or abstemious individuals; and
- the sick and convalescents were not allowed to participate.
This information was not collected in any database and only served to recognise who could be asked to collaborate at the time of contact. To minimise intrusion, the interviewers were trained in contact strategies. People contacted and accepted were given a card (or sent an email) with an interviewer identification code and the link to the questionnaire website. Each interviewer followed quotas of gender, age (18-30; 31-50 and 51-70) and habitat (each individual had to reside in a different town). As the keyboard had to be used to respond to the questionnaire on implicit attitudes, the interviewers indicated that the interview could only be answered from a desktop computer.

The fieldwork took place in May 2016, and 844 responses were recorded. We then:

- Eliminated 32 cases from repeat IPs (Internet Protocol). The IP is unique for each computer and session with Internet access. Although this strategy may prevent the participation of other potential well-intentioned interviewees not contacted beforehand, eliminating repeat IPs excludes the possibility of retaining various responses from the same person/household in the same session;
- 20 cases with fixed responses were discarded. Cases whose responses for all items were 1, 4 and 7 (for scales in the range 1-7) and 1, 5 and 10 (for scales in the range 1-10) were eliminated;
- 51 responses provided in less than 300 ms were removed; and
- 16 cases with missing information were removed.

After the debugging process (35 outliers) the final sample (n = 690) is balanced in terms of gender and age (mean = 37 years), occasionally purchases organic products, with much higher consumption of conventional wines (87.5 per cent) and sporadic consumption of OWs. Table I shows the sample profile.

**Measurement of implicit attitudes**

This study uses the Implicit Association Test (IAT) initially proposed by Greenwald et al. (1998) because it is the most reliable procedure for measuring implicit attitudes, with reliabilities higher than those accepted by the literature (Perugini, 2005). The software used to apply the IAT was developed by Mason et al. (2013), as it allows us to obtain answers online. This software directly measures response speed in milliseconds so that the shorter the response time, the greater the implicit association.

IAT is a methodology developed in the area of social psychology which enables measurement of the intensity with which various concepts are automatically associated with each other. This technique is applied by asking participants to classify different stimuli into different response categories so that they evoke the concepts that represent the categories. In this study, the stimuli are:

- Words that describe the organic and non-organic concepts. Organic is described by the items: natural, healthy, responsible, beneficial, favourable and positive. Non-organic is described by the items: pollutant, harmful, irresponsible, noxious, unhealthy and unsustainable.
- Images of wine bottle labels were used to distinguish between OW and conventional wines because the label is the main information consumers have for identifying wine while shopping. Labels of real and fictitious, prestigious and little-known brands were used (the images can be obtained upon personal request to the authors).

How does IAT work? The procedure comprises seven blocks or tasks carried out successively, each of them containing a series of 20 to 40 rounds. In each block,
participants must classify the stimuli (that flash in the centre of the screen) in the response categories shown on the right and left-hand side of the screen. To classify the stimuli, participants only have to press two keys: e for categories on the left of the screen and i for ones on the right.

In the first block, the items are classified into the categories (organic vs non-organic). In the second block, the images of wine labels are classified into the categories “organic wine” vs “conventional wine”. Then and in successive blocks, specific combinations of stimuli are produced (words and images) which must be associated to the categories. Appendix 1 shows the steps followed in this test in detail.

To measure implicit attitudes we used the \( d \)-score which ranges from \(-2\) to \(+2\), is non-dimensional and comparable to Cohen’s (1988) \( d \) effect size statistic. The \( d \) effect size statistic measures the differences between the averages response-latencies in the analysed conditions (organic vs conventional wines) divided by the standard deviation of latencies across the cited conditions. Here, response-latency is defined as the time elapsed between the perception of a stimulus and the start of the response. For the IAT, higher and positive \( d \)-scores represent stronger implicit attitudes, where OWs are associated with organic labels and conventional wines with non-organic labels. In contrast, more negative values reflect stronger implicit attitudes where the associations are OWs with non-organic labels and conventional wines with organic labels.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>359 (50.6)</td>
</tr>
<tr>
<td>Female</td>
<td>341 (49.4)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>52 (7.5)</td>
</tr>
<tr>
<td>Secondary</td>
<td>68 (9.9)</td>
</tr>
<tr>
<td>Bachelor/Job training</td>
<td>169 (24.5)</td>
</tr>
<tr>
<td>In college career</td>
<td>134 (19.4)</td>
</tr>
<tr>
<td>University degree</td>
<td>267 (38.7)</td>
</tr>
<tr>
<td>Age (Mean = 37 years old)</td>
<td></td>
</tr>
<tr>
<td>18-30</td>
<td>266 (38.6)</td>
</tr>
<tr>
<td>31-50</td>
<td>230 (33.3)</td>
</tr>
<tr>
<td>51-70</td>
<td>194 (28.1)</td>
</tr>
<tr>
<td>Wine consumption</td>
<td></td>
</tr>
<tr>
<td>No consumption</td>
<td>186 (27.0)</td>
</tr>
<tr>
<td>Only conventional</td>
<td>214 (31.0)</td>
</tr>
<tr>
<td>Conventional &gt; Organic</td>
<td>220 (32.9)</td>
</tr>
<tr>
<td>Conventional = Organic</td>
<td>50 (7.2)</td>
</tr>
<tr>
<td>Conventional &lt; Organic</td>
<td>17 (2.5)</td>
</tr>
<tr>
<td>Only organic</td>
<td>3 (0.4)</td>
</tr>
<tr>
<td>Frequency of consumption</td>
<td></td>
</tr>
<tr>
<td>Very sporadically</td>
<td>81 (16.1)</td>
</tr>
<tr>
<td>Sometimes a month</td>
<td>136 (27.0)</td>
</tr>
<tr>
<td>2-3 times a month</td>
<td>86 (17.1)</td>
</tr>
<tr>
<td>One time per week</td>
<td>84 (16.7)</td>
</tr>
<tr>
<td>2-3 days a week</td>
<td>81 (16.1)</td>
</tr>
<tr>
<td>Daily</td>
<td>36 (7.1)</td>
</tr>
</tbody>
</table>

Table I. Sample profile (\( n = 690 \))
Measurement of explicit variables

Explicit attitudes. Two measurements were used:

1. Attitude towards wine and alcohol scale (Marinelli et al., 2014). The scale has 17 bipolar adjectives where each adjective pair was rated on a seven-point scale. Its authors apply the scale to young Italians and conduct an exploratory factor analysis, but do not report on scale reliability or validity; and

2. Attitude towards the OW scale (Rojas–Méndez et al., 2015). With 9 items rated on a seven-point Likert-type scale. The original scale was applied to Canadian adults obtaining an alpha of 0.82 with only four items, but there is no information on whether the scale meets validity requirements or on its dimensionality. This study applies the scale in the form of a 10-point Likert-type scale as Spanish consumers are more used to the decimal metric system.

Purchase intention. Measured using the single item “Considering 0 = not at all likely to 10 = will certainly, how likely is it that you will purchase organic wine?” This item comes from Kozup et al. (2003). The original range 0-100 was changed to 0-10 following Juster’s (1966) proposal.

Procedure

A three-part Web questionnaire was designed. The first part was the informed consent. It indicated that the survey was for a university study; it was voluntary and did not ask for personal information (except for gender, age and town of residence). On the Web page, each individual had to enter the interviewer’s code and the post code for her/his place of residence. It was noted that by entering these data, they were agreeing to participate in the study. The second part dealt with IAT and the third part included questions on OW purchase intention, the aforementioned attitudinal scales and demographic data. Implicit and explicit attitudes have been successfully measured online in other studies (Maier et al., 2015).

To minimise a possible priming effect the IAT was presented first followed by the questionnaire to measure explicit attitudes. The understanding and ease of responding to the questionnaire were pre-tested by three individuals between 18 and 30 years old and another three individuals over the age of 50. The original items were translated from English to Spanish using the back translation system (Guthery and Lowe, 1992).

Findings

In this section, four types of analysis are presented. First, the descriptive statistics corresponding to the variables ‘OW purchase intention’ and ‘implicit attitudes’ are presented. Second, the structures, reliabilities and validity of the explicit attitudes from multi-item scales are verified. Third, an ordinal logistic regression is applied because the dependent variable “OW purchase intention” has an ordinal nature. The objective is not to predict OW purchase intention but to detect which types of attitudes contribute significantly to explain the aforementioned intention. Finally, using the relevant variables from the previous step, a cluster analysis is applied by the K-means method to create attitudinal segments following the criteria of parsimony and discrimination. Appendix 2 shows the descriptive statistics for all the items finally used which come from the measures described above.

Descriptive results

OW purchase intention. It is a variable with ordinal nature that presents a median Me = 6.00 and interquartile range IQR = 4.00 showing an slight negative asymmetrical distribution
(Ordinal skewness = −0.33). Both P–P and Q–Q plots show an almost linear behaviour. Due to this linearity, the average behaviour of the general sample (0.55 in the 0-1 range) can be estimated and is almost equal to Huber’s M-estimator of location (robust estimator to outliers) which is 0.57.

*Implicit attitudes.* It is a quantitative variable with mean $M = 0.67$, standard deviation $SD = 0.57$ with slight asymmetric distribution to positive scores (skew = −0.82) and kurtosis very close to the unit (1.09). As the observed d-scores are in fact effect sizes, they can be interpreted following Cohen (1988), Sawilowsky (2009), creating nine levels of effect sizes[1]. Most of the sample shows effect size (d) with positive associations (19.6 per cent with moderate d, 29.3 per cent with large d and 17.0 per cent with huge d). This result shows a moderate to significant association of OW with the concept organic and of conventional wine with the non-organic concept. Nevertheless, this association cannot be understood as high.

*Model measurement of explicit attitudes*  
To test and assess explicit attitude measures, a two-step process is performed. First, principal component analyses are used to retain the relevant items and to explore the dimensionality of the measures. Second, a confirmatory factor analysis (CFA) to verify the resulting dimensional structure from the exploratory principal component analysis is applied. Thus:

**Step 1.**
- Rojas–Méndez’s et al. (2015) scale shows a moderate fit because the Kaiser–Meyer–Olkin coefficient (KMO) = 0.78, Barlett’s Sphericity Test = 1685.12 ($df = 36, p = 0.00$) and measures of sampling adequacy (MSA) are adequate (Min (MSA) = 0.73). Two factors explain 53.18 per cent of the variance, but factor loadings are low (0.57 to 0.83). Cronbach’s alpha reliabilities are also low (0.78 and 0.64).
- The Marianelli’s et al. (2014) scale shows a better fit. Thus, KMO = 0.91, Barlett’s Test of Sphericity = 3610.12 ($df = 136, p = 0.00$) and min (MSA) = 0.62), with three factors that explain 50.01 per cent of the total variance. Three items (DS20, DS24 and DS32) that did not load on any factor were eliminated. The three-factor solution improves (57.34 per cent of explained variance), but factor loadings are still low (0.52 to 0.78). Cronbach’s alpha reliabilities are 0.87, 0.46 and 0.46.

**Step 2.**  
Only items with factor loadings higher than 0.70 (the number of factors reduces to three) in the previous principal component analyses were retained and introduced in CFA. EQS 6.1 software (Bentler, 1994/2011; Bentler and Wu, 2005) was used. The variables are considered to be reflective. The Wald Test suggests eliminating item DS23. The new model has three factors with three items each (Table II) and shows a good fit (Satorra–Bentler scaled $\chi^2 = 61.63; df = 24; p = 0.00$; Normed $\chi^2 = 2.57$; Bentler–Bonett Normed Fit Index BBNFI= 0.97; Comparative Fit Index–CFI= 0.98) with low error (Root Mean–Square Error of Approximation–RMSEA= 0.05). Goodness of fit and error values are within the thresholds recommended in the literature (Hair et al., 2009). Robust estimators were applied because multivariate normality was not fulfilled (Mardia test = 29.00).

Reliabilities are above the thresholds suggested in the literature and factors have convergent and discriminant validities. Convergent validity was verified using confirmatory factor loadings (all significant, >0.70 or with a mean in each factor over 0.70) and AVE coefficients above 0.50 (Fornell and Larcker, 1981). Discriminant validity was verified with the confidence interval for correlations method. None of the three intervals
contains the correlation value equal to one (Hair et al., 2009), thereby confirming discriminant validity.

The first factor (Factor 1) covers items related to the perception of OW as healthier (item LIK03), of higher quality (item LIK04) and tastier (item LIK06). This factor refers to the intrinsic physical characteristics of the wine and is denominated “Attitude towards intrinsic attributes”. The second factor (Factor 2) covers emotional aspects that generate attraction as appeal (item DS18), pleasant (item DS19) and comfortable (item DS25), and is denominated “Attitude towards engaging feelings”. Finally, the third factor (Factor 3) covers activation items, both personal (happy–item DS26–, euphoric–item DS29–) and social (socialising–item DS31–) and is denominated “Attitude towards arousal feelings”.

Regression results
The relationship between attitudes and OW purchase intention was examined with ordinal logistic regression using the three factors for explicit attitudes and the variable for implicit attitudes as independent variables.

A common problem in this type of regression is the probable failure of the proportional odds assumption when “the sample size is large or there are continuous variables in the model” (O’Connell, 2006, p. 29). In this case, there are different strategies. Thus, for example, Williams (2006) proposes the use of a partial-proportional odds model, and Ari and Yildiz (2014) propose a non-proportional odds model. However, the most common strategy is to reduce the number of dependent variable response categories, usually by applying binary logistic regression and checking whether the parallel line test is met. Nevertheless, this strategy produces a great loss of information in the dependent variable. In the present analysis, five categories are used through the quintiles of the variable “OW purchase intention” (Quintile 1 = 0 to 2; Quintile 2 = 3 to 4; Quintile 3 = 5 to 6; Quintile 4 = 7 to 8; Quintile 5 = 9 to 10). SPSS version 25 was used to perform the analyses.

Prior to performing regression analysis, associations between independent variables (implicit and explicit attitudes) were checked. Thus, Pearson’s correlations between implicit attitudes and the three factors are very low in absolute terms ($r_{\text{implicit, factor1}} = 0.07, p = 0.04$; $r_{\text{implicit, factor2}} = 0.03, p = 0.22$; $r_{\text{implicit, factor3}} = 0.09, p = 0.01$) and correlations between explicit

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>CR</th>
<th>AVE</th>
<th>$\lambda$</th>
<th>F1-F2</th>
<th>F1-F3</th>
<th>F2-F3</th>
<th>$r$</th>
<th>SE</th>
<th>CI of $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Organic wines are/have ___ than conventional ones, LIK03. Healthier LIK04. Superior quality LIK06. Tastier</td>
<td>0.81</td>
<td>0.59</td>
<td>0.67</td>
<td>0.66</td>
<td>0.53</td>
<td>0.84</td>
<td>0.03</td>
<td>0.59–0.72</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>DS18. Not appealing/Appealing DS19. Unpleasant/Pleasant DS25. Uncomfortable/Comfortable</td>
<td>0.77</td>
<td>0.52</td>
<td>0.74</td>
<td>0.75</td>
<td>0.72</td>
<td>0.84</td>
<td>0.02</td>
<td>0.80–0.89</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>DS26. Sad/Happy DS29. Not socialising/Socialising DS31. Depressing/Euphoric</td>
<td>0.81</td>
<td>0.59</td>
<td>0.84</td>
<td>0.66</td>
<td>0.80</td>
<td>0.80</td>
<td>0.80</td>
<td>0.80</td>
<td></td>
</tr>
</tbody>
</table>

Notes: CR = Composite reliability, AVE = Average variance extracted, $\lambda$ = Confirmatory factor loadings, $r$ = Pearson correlation coefficient, SE = Standard error, CI = Confidence interval
attitudinal factors are high but different from 1 ($r_{\text{factor1,factor2}} = 0.54, p = 0.00$; $r_{\text{factor1,factor3}} = 0.45, p = 0.00$; $r_{\text{factor2,factor3}} = 0.67, p = 0.00$).

In regards to general sample, the model fits well. Thus, chi-square is 186.07 (df = 4, $p = 0.00$) implying that the regression model with the independent variables produces a significant improvement over the baseline intercept-only model. Goodness of fit is very good (chi-square = 2810.30, df = 2752, $p = 0.21$). Nagelkerke pseudo–R is 0.25 (the model explains 25.0 per cent of total variability) and the test of parallel lines using Logit as the link function shows that location parameters (slope coefficients) can be considered the same across response categories (chi-square = 21.03, df = 12, $p = 0.05$).

Table III shows the parameter estimates for implicit and explicit attitudes, indicating that implicit attitudes do not contribute to explaining the OW purchase intention, whereas the three explicit attitudes are relevant.

**Purchase intention and attitudinal segmentation**

After detecting which types of attitudes contribute significantly to explain “OW purchase intention”, cluster analysis was used to create different consumer profiles and discriminant analysis to test 2, 3 and 4 cluster solutions. The cluster analysis was run following Dolnicar’s (2003) recommendations on the variables to introduce, clustering method and stability of results. Only significant variables were introduced (Gnanadesikan et al., 1995) and the implicit attitudes variable was ignored as it was considered a noisy non-informative variable (Fraiman et al., 2008). The K–means method was used to minimise inertia (internal distance of clusters) and tests were carried out on two, three and four clusters. Finally, discriminant analysis was used to test the goodness of the three solutions.

The most parsimonious solution with the greatest discriminatory power (stability) retains two clusters ($G_1 = 398$ and $G_2 = 292$) and all tests of equality of group means were significant. Discriminant analysis shows that Box’s M = 36.46 (F = 6.05, $p = 0.00$), canonical correlation $\rho = 0.81$, Wilks’ Lambda = 0.35 ($\chi^2 = 720.84, p = 0.00$) and correctly groups 98.4 per cent of the cases. Table IV shows the resulting segmentation with the description of each segment. There are no differences between the two segments in relation to age, education or wine consumption frequency. The significance of the differences between segments was calculated using the t-test for continuous variables, non-parametric tests for ordinal variables and the $\chi^2$ test for the variable gender.

Segment 1 (Moderately pro-organic) is the most numerous (57.68 per cent) with slightly greater female presence (53.5 per cent), medium–high OW purchase intention (0.65 in the range 0-1, equivalent to quintile 3), higher attitudinal values for the three explicit attitudes than Segment 2, and only 25.1 per cent consumes only conventional wine. Its ordinal logistic model fits well and meets the proportional odds assumption.

### Table III.

Summary of ordinal logistic model for intention to purchase OW ($n = 690$)

<table>
<thead>
<tr>
<th>Model term</th>
<th>Parameter estimate</th>
<th>S.E.</th>
<th>Wald</th>
<th>$p$-value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implicit attitudes</td>
<td>0.23</td>
<td>0.13</td>
<td>3.41</td>
<td>0.06</td>
<td>−0.01, 0.48</td>
</tr>
<tr>
<td>Factor 1: Att. toward intrinsic attributes</td>
<td>0.06</td>
<td>0.02</td>
<td>17.06</td>
<td>0.00</td>
<td>0.03, 0.09</td>
</tr>
<tr>
<td>Factor 2: Att. toward engaging feelings</td>
<td>0.14</td>
<td>0.03</td>
<td>20.91</td>
<td>0.00</td>
<td>0.08, 0.20</td>
</tr>
<tr>
<td>Factor 3: Att. toward arousal feelings</td>
<td>0.13</td>
<td>0.03</td>
<td>16.44</td>
<td>0.00</td>
<td>0.07, 0.19</td>
</tr>
</tbody>
</table>

**Notes:** All model terms have 1 degree of freedom; Link function: Logit, S.E = Standard Error, CI = confidence interval
Apathetic mainly comprises men (female = 43.8 per cent) with low OW purchase intention (0.40 in the range 0-1, equivalent to quintile 2), showing significantly greater consumption of conventional wines (39.8 vs 25.1 per cent in the Moderately Pro-organic segment). This Apathetic segment has significantly lower attitudinal levels in all types of explicit attitudes. It is not very open to trying OW because, although OW is perceived as sustainable, the segment has not developed sufficient positive inclination to make the leap to consumption.

Comparison of the two ordinal regression models shows that Nagelkerke’s $R^2$ is 0.10 for Segment 1 and 0.25 for Segment 2. This means that the model for Segment 2 has better explanatory power, but as there are no other models for comparison, it cannot be stated whether these $R^2$ are low or high. Note that in ordinal logistic models, $R^2$ coefficients do not represent the amount of explained variance but the proportional reduction in the absolute value of the log-likelihood measure.

Regarding implicit attitudes, it can be seen that for both segments the effect sizes can be described as ‘moderately positive’, although they are different from the quantitative perspective (Segment 1 with M = 0.72 and SD = 0.50, Segment 2 with M = 0.60 and SD = 0.63, $t = 2.63$, $p = 0.01$). This means that the two segments have approximately the same implicit preference towards OW, without spontaneous and unconscious attitudes contributing significantly to explain the OW purchase intention.

Conclusions
To the best of our knowledge, this study is the first to report on the potential influence of implicit and explicit attitudes on OW purchase intention, conducting attitudinal segmentation. Four major contributions of this research can be highlighted.
First, it has been found that only explicit attitudes (more strongly related to deliberate drivers) significantly influence OW purchase intention. In contrast, implicit attitudes (more strongly connected with non-conscious behaviour drivers) are not significant predictors of this intention. Although consumers associate OW with the organic category (green or eco-friendly products) and conventional wine with the non-organic category (non-green or non-eco-friendly products), neither generates greater OW purchase intention. This finding may mean that the association that consumers generate with the positive aspects of OW is mainly thoughtful, a conscious attitude that requires eco-friendly awareness, a willingness to pay more for OW and/or a disposition to make the effort to go to retailers where it is possible to buy OW.

From a managerial point of view, given that implicit attitudes are linked to individual feelings without conscious awareness and do not contribute to explain purchase intention, it would seem that psychological pricing, product design or an emotional communication strategy (that seek to increase purchase intention based on non-conscious drivers) are not appropriate. This is consistent with Vriens et al. (2016), who indicate that in the case of low importance of implicit drivers and high importance of explicit ones, it is more advisable to use those that explicitly activate the buyer (e.g. sales promotion, in-store wine-tasting). More particularly, it seems interesting to consider that the intrinsic attributes of the OW and engaging and arousal feelings should be addressed by producers and marketers hand-in-hand to build a coherent marketing strategy. Producers should pursue better intrinsic attributes (healthier, higher quality and more pleasant to the palate), whereas marketers should improve positioning by working on explicit attitudes.

Second, this study finds very low correlations between explicit and implicit attitudes. It appears to support the idea that they are different attitudinal constructs that refer to different mental processes (Nosek and Smyth, 2007; Samson and Voyer, 2012).

Third, the association between OW and “organic” as an eco-friendly product category has been found to be significant but not intense. That may be due to the dual reputation of wine in Spain (Nielsen and OeMv, 2009). First, it is seen as a product with a significant cultural component (positive aspect). Second, it is considered an elitist product with low generational handover, high alcohol content and is produced using pesticides and additives. These negative elements generate a “less preferred” product image. In addition, the situation is made worse by the fact that consumers can neither understand what “organic” means (Rogers, 2011) nor can they distinguish between the various eco–labels in existence (Delmas and Lessem, 2017), so they do not recognise the benefits of OW. Furthermore, quite a large group of Spanish consumers surprisingly associates conventional wines with non-organic attributes (and therefore, with objectively very negative descriptors). Considering that modern viticulture is becoming increasingly environmentally friendly, it would be interesting for the industry to communicate and appropriately position wine production in relation to its sustainability.

Finally, potential consumers of OW can be divided into a pro-organic segment (which does not have a high purchase intention) and an apathetic (and numerous) segment with a low purchase intention. These consumers, however, live in a country with a long tradition of wine making, producing high quality wines, with high organic production and a small consumption of OW. This situation may stem from the fact that those with a positive attitude towards OW cannot buy it because of the difficulty in changing their habit of purchasing non-OW and because of the difficulty shown by the producers’ inefficient use of marketing tools. Thus, in the Spanish market, it is difficult to find OW on supermarket shelves, and it is also highly likely that consumers do not see the real benefit of consuming OW over conventional wines. The first issue is in keeping with Vermeir and Verbeke (2006)
who point out that perceived low availability of sustainable products may act as an inhibitor of purchase intentions. The second issue has also been cited in the literature as a generalised situation in many countries (Ogbeide et al., 2015).

The sector is of course facing a great challenge which can be tackled from three different perspectives: get consumers to perceive that the intrinsic attributes of OW (especially those related to health) make it possible to pay a premium price, improve the positioning of OW by getting emotions to play a significant role and ensure OW reaches consumers (rather than consumers having to seek it out).

**Limitations and future research**

Two limitations can be highlighted. The first lies in the lack of robust attitudinal measures for wine in general and OW in particular. This fact limits the work of academics and professional researchers and so we call for research to develop valid, reliable measures. The second limitation is contextual. The study took place in a country where consumption of conventional wine has dropped markedly (2000-2015) due to a strong government campaign against alcohol consumption and strong competition from substitute products (beer, soft drinks). The transition of Spanish consumers towards OW slowed down during the financial crisis (2007-2014) and, although the market is pro-organic, the main challenge currently is to increase the level of consumption. This situation is a limitation for cross-country comparisons and also points to the need for future studies to contextualise their findings.

Finally, given the enormous change in the positioning of OW and the consolidation of new segments (e.g. Millennials, wine tourists), greater research effort is needed into the variables that would help to promote OW consumption from the consumer perspective.

**Note**

1. Levels used are: $d < -1.20$ (Hugely negative association), $-0.80$ to $-1.19$ (largely negative), $-0.50$ to $-0.79$ (moderately negative), $-0.20$ to $-0.49$ (slightly negative), $-0.19$ to $+0.19$ (no association), $+0.20$ to $+0.49$ (slightly positive), $0.50$ to $0.79$ (moderately positive), $+0.80$ to $+1.19$ (largely positive) and $d > 1.20$ (Hugely positive).

**References**


Organic Trade Association (2016), *Consumer Attitudes and Beliefs Survey*, OTA, Washington, DC.


Appendix 1. Steps and labels used in implicit association test (IAT)

<table>
<thead>
<tr>
<th>No. of Blocks</th>
<th>Rounds</th>
<th>Function</th>
<th>Items assigned to left key (E)</th>
<th>Items assigned to right key (I)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>Practice</td>
<td>Ecological words (Eco.Words)</td>
<td>Non-ecological words (Non-Eco.Words)</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>Practice</td>
<td>Organic wine labels (Org.Wine.Lab)</td>
<td>Conventional wine labels (Conv.Wine.Lab)</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
<td>Practice</td>
<td>Eco.Words + Org.Wine.Lab</td>
<td>Non-Eco.Words + Conv.Wine.Lab</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>Test</td>
<td>Eco.Words + Org.Wine.Lab</td>
<td>Non-Eco.Words + Conv.Wine.Lab</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
<td>Practice</td>
<td>Non-Eco.Words</td>
<td>Eco.Words</td>
</tr>
<tr>
<td>6</td>
<td>40</td>
<td>Practice</td>
<td>Non-Eco.Words + Org.Wine.Lab</td>
<td>Eco.Words + Conv.Wine.Lab</td>
</tr>
<tr>
<td>7</td>
<td>40</td>
<td>Test</td>
<td>Non-Eco.Words + Org.Wine.Lab</td>
<td>Eco.Words + Conv.Wine.Lab</td>
</tr>
</tbody>
</table>

Table AII. Descriptive statistics for items used

<table>
<thead>
<tr>
<th>Codes</th>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>d–score</td>
<td>d–score for IAT</td>
<td>0.68</td>
<td>0.57</td>
</tr>
<tr>
<td>Rojas-Méndez’s et al. (2015) scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIK03</td>
<td>Organic wines are healthier than conventional ones.</td>
<td>7.82</td>
<td>2.19</td>
</tr>
<tr>
<td>LIK04</td>
<td>Organic wines have superior quality than conventional ones.</td>
<td>6.30</td>
<td>2.44</td>
</tr>
<tr>
<td>LIK06</td>
<td>Organic wines are tastier than conventional ones</td>
<td>5.11</td>
<td>2.07</td>
</tr>
<tr>
<td>Marianelli’s et al. (2014) scale. Compared with conventional wines, organic wines are [...]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS18</td>
<td>[...] Not appealing/Appealing</td>
<td>5.16</td>
<td>1.46</td>
</tr>
<tr>
<td>DS19</td>
<td>[...] Unpleasant/Pleasant</td>
<td>4.67</td>
<td>1.27</td>
</tr>
<tr>
<td>DS25</td>
<td>[...] Uncomfortable/Comfortable</td>
<td>4.85</td>
<td>1.22</td>
</tr>
<tr>
<td>DS26</td>
<td>[...] Sad/Happy</td>
<td>5.16</td>
<td>1.25</td>
</tr>
<tr>
<td>DS29</td>
<td>[...] Not socializing/Socializing</td>
<td>5.19</td>
<td>1.23</td>
</tr>
<tr>
<td>DS31</td>
<td>[...] Depressing/Euphoric</td>
<td>5.26</td>
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</tbody>
</table>

About the authors

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Gender, knowledge and motivation for wine purchasing

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Abstract

目的 – 该论文的目的是验证性别对葡萄酒消费者行为影响的研究中所描述的影响，即关于信息搜索和动机的影响，是否可以由中介变量（主观知识）的效应来解释，考虑到知识在决策过程中的重要性。

设计方法/研究方法 – 一个路径分析模型被构建，包含一个外生变量（性别）、一个中介变量（主观知识）和四个依赖变量（信息需求和三个动机维度）。该模型基于从葡萄牙里斯本和波尔图地区的大型超市中收集的523名购物者的数据。结构化访谈在结账时进行，收集了相关变量的信息。针对217名葡萄酒消费者的潜在变量（知识、信息和动机）的衡量尺度在进行确认性因素分析之前已经过验证。

发现 – 主观知识完全介导了性别对动机和信息需求的影响。男性认为自己更了解葡萄酒，这种中介效应解释了为什么与女性相比，他们使用较少的个人信息来源，并且更受购买葡萄酒的动机的驱动。

实际意义 – 作者建议大型超市开展促进葡萄酒知识发展的促销活动。

原创性/价值 – 该研究通过引入和验证一种替代的性别效应在葡萄酒购物中的表达方式，强调了消费者感知或主观知识在决策过程中的作用。

关键词 – 性别、葡萄牙、调查、葡萄酒、结构方程模型、消费者行为、主观知识

引言

买家的性别是影响购买体验商品决策过程的一个重要因素（Park et al., 2009）。与女性相比，男性在搜索信息方面更为省力（Laroche et al., 2003）。所谓的选择模型被用作寻找信息的主要基础。在零售环境中，女性往往从决策过程中获得回报，而男性则倾向于将购物视为一个问题，并寻找直接的解决方案（Campbell, 2000）。

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Wine is one of the product categories whose decision process is more complex, since most of its attributes are unverifiable before consumption and the search for information may be costlier for the decision maker than the direct experience with the product (Nelson, 1970). The fact that wine markets are predominantly fragmented (Berni et al., 2005), with a wide range of products and a large diversity of brands, also contributes to the complexity of the consumer choice process, which emphasises the salience of extrinsic attributes compared to intrinsic ones and increases the importance of the consumer's subjective knowledge of the category, compared to information search (Park et al., 1994).

The main purpose of this paper is to verify if the gender effects described in the wine consumer behaviour literature, namely, regarding information search and the motivations to buy, may be explained by the mediating effect of subjective knowledge, taking into consideration that gender influences the importance of knowledge in the decision process (Barber et al., 2009). The next section carries a literature review to frame the identified variables, placing gender and knowledge in the context of the wine purchasing process.

**Literature review**

*Subjective knowledge and information*

The process of choosing wine is complex, namely, due to the product breadth, to market differentiation, and to the considerable information asymmetry. Being an experience good, the consumers' knowledge plays a key role in the decision process (Bishop and Barber, 2012) and the information processing ends up being an intense experience in wine acquisition (Bruwer et al., 2011). To overcome this situation of complexity, the buyer will retrieve his/her own life experiences, knowledge and the most diverse sources of external information. According to Barber (2009), knowledge is a search for internal information, accessible in one's memory, being expected that consumers who believe to be more knowledgeable will have less need to seek external information. Johnson and Bastian (2007) suggest that buyers who are more confident in their knowledge neither need much information to purchase nor resort to other risk reducing strategies, being more open to new experiences. Instead, those who have less knowledge or are less confident in their knowledge routinely buy the same type and/or brand of wine, or employ other risk reduction strategies, especially external information, with specific emphasis on credible sources such as family and friends.

Johnson and Bastian's findings are consistent with the theory of subjective knowledge, i.e. how much people think they know. The gap between the consumers' subjective and objective knowledge is due to over- or under-confidence about their actual knowledge, so the measure of subjective knowledge is chiefly dependent on self-confidence (Brucks, 1985). On one hand, there is a wide agreement in the literature, which considers that what drives the buying decision is not the objective knowledge, but rather an expression of subjective knowledge that reflects confidence in the decision maker's role and an expected effectiveness of that decision (Bishop and Barber, 2012; Marques and Almeida, 2013; Park and Lessig, 1981; Raju et al., 1995). Likewise, Brucks (1985) claims that consumers who believe to have good subjective knowledge easily discard perceived inferior options; the same author also emphasises that subjective knowledge is related to decision-making processes involving a lower number of attributes or benefits than objective knowledge, and that external search for product information is motivated by lack of confidence on one's knowledge. On the other hand, it has been demonstrated that experience with the product category, accessible in memory, is the main antecedent of subjective but not of objective knowledge (Park et al., 1994). Finally, subjective knowledge was actually identified as the major determinant of the quantity of wine consumed (Brunner and Siegrist, 2011). In short, the literature suggests that information processing during purchase decisions depends more
on subjective knowledge than on objective knowledge of the product category, likely because subjective knowledge mediates the effects of objective knowledge on decision outcomes (Raju et al., 1995).

Motivations for wine consumption
In the contexts of either market or academic research on consumer behaviour, the study of motivations for the purchase and consumption is based on the question “Why?”, i.e. the reasons or motives to feel the need for a certain product category or to choose a specific product or brand. The study of motivations in quantitative marketing research is seldom based on motivational theories. There is a propensity to misunderstand motivation with benefits, with attitudes and even with perceptions of attributes. According to Fennell (1978), motivation is either based on aversive mechanisms, where consumption behaviour results from felt or perceived problems; or on appetitive mechanisms, where consumption behaviour is perceived as an end, thus self-rewarding. Aversion is also known as negative motivation and appetite as positive motivation.

Positive motivation rather operates in a frame of expectations anticipating gratification by consumption (Cohen and Warlop, 2001), through an affective assessment of an imagined consumption experience, usually influenced by memories of past experiences activated by stimuli such as the marketing communication. Rossiter and Percy (1987) proposed three essential positive consumption motivations: sensorial gratification; mastery or intellectual stimulation; and social motivation, including affiliation and conformity or approval. These motivational facets have appeared in several studies on wine purchase and consumption, although in most cases with no connection to the underlying theory.

For example, Hall et al. (2004) identified, as motivations for wine consumption, its paring with food, the buyer’s socialisation desires, and the opportunity to impress others. Charters and Pettigrew (2008) presented a paradigm of motivation for wine consumption based on three structural elements – physical, symbolic and experiential – but end up splitting the experiential motivation into three dimensions: sensorial experience (taste, paring with food); interactive experience (socialisation, fraternising); cognitive experience (challenge and exploration). Barrena and Sánchez (2009) mention that consumers from the Mediterranean countries claim sensorial gratification as the main motivation for wine drinking. However, they refer that younger people are driven by different motives such as cultural identity and social status. Summarising these papers, it may be concluded that Rossiter and Percy’s (1987) categorisation of positive motivations is well documented in the wine consumption literature.

Gender effects
In spite of being typically used to signify an identity or even maleness or femaleness traits, the concept of gender used here has a broader meaning, also considering the effects of biological sex differences on wine consumption behaviour. In this sense, we can say that gender has been referred to by different researchers as a decisive factor in the consumers’ wine choice (Berni et al., 2005; Olsen et al., 2007; Thach and Olsen, 2006). (Hoffman, 2004) found that females are more likely to drink white wine and sparkling wine than males, with no significant differences between genders in relation to the consumption of red wine. As for attributes, females prefer fruity wines, while males place greater value on characteristics associated with the body and maturation (Bruwer et al., 2011).

Literature is prolific about gender differences in the decision process, namely regarding knowledge and information retrieved. According to the selectivity model, males tend to follow a more heuristic information process than females, and they are more subjective and
intuitive in decision-making (Laroche et al., 2003). This more simplified decision process is reinforced by the fact that males feel more self-confident, particularly in the case of wine (Babakus and Yavas, 2008; Barber, 2009; Bishop and Barber, 2012). Thus, males with higher levels of subjective knowledge rely more on their own experience and on impersonal sources, therefore more fully exploiting the knowledge of the category (Barber, 2009; Bishop and Barber, 2012). On the contrary, females show greater perceived risk associated to wine buying (Barber et al., 2009) and need more information to complete the purchase (Atkin et al., 2007). Females are more sensitive to details (Bishop and Barber, 2012) and they prefer personal sources of information (Barber, 2009; Bishop and Barber, 2012). Moreover, they value the interaction in the buying process (Babakus and Yavas, 2008).

According to Babakus and Yavas (2008), the gender differences in consumption information processing can have a motivational root, given that females are more oriented towards the relationship with others and males are more task-oriented and more independent in the acquisition and processing of information, valuing knowledge. Regarding the differences in the relative importance of motivations for wine consumption, Thach (2012) suggests that males differentiate themselves from females in the importance attributed to mastering the wine knowledge, while females distinguish themselves by the importance of social motives.

Thus, the first set of hypotheses for this research may be produced:

\( H1 \). In the process of buying wine, males and females differ in subjective knowledge, in the need for information and in motivations.

\( H1.1 \). Males have more subjective knowledge.

\( H1.2 \). Females have greater need for personal information.

\( H1.3 \). Males give more importance than females to intellectual motivation.

\( H1.4 \). Females give more importance than males to social motivation.

However, as already mentioned, the main objective of this research is to assess whether \( H1 \) still holds when the postulated effects are mediated by subjective knowledge. There are several studies confirming the influence of subjective knowledge on decision-making, with particular focus on the information breadth and processing (Dodd et al., 2005). For example, regardless of gender, wine buyers who are less knowledgeable rely more on advice at the retail outlet, while those who rely more on their knowledge seek less information (Johnson and Bastian, 2007).

The value attributed by males to the knowledge of wines tends to influence other decision facets (Bishop and Barber, 2012). For example, regarding the consumption of technology, Venkatesh and Morris (2000) suggest that males keep their self-esteem by avoiding personal information sources, since the male role in the buying process of these products incorporates knowledge of the category. It is legitimate to suppose that the same will happen in the wine category, requiring males to have a familiarity and a cognitive mastery that is not required from females (Bishop and Barber, 2012). For example, Thach (2012) argues that males show more interest in discussing technical aspects of wine, taking the opportunity to show their knowledge, and that even the interaction with others may be related to the desire to demonstrate and to develop knowledge. In this setting, it is also
acceptable to admit that subjective knowledge influences the relative importance of motivations. As a result, a second set of hypotheses is derived:

**H2.** Gender effects postulated in **H1** are mediated by subjective knowledge in the following way.

**H2.1.** Females have greater need for personal information because they have less subjective knowledge.

**H2.2.** Males give more importance than females to intellectual motivation because they have more subjective knowledge.

**Methodology**

To empirically assess the model integrating the hypotheses exposed above, it was necessary to collect data from a sample of 600 purchasers of wine. They were interviewed by interviewers from a market research company at six facilities of a hypermarket chain in the metropolitan areas of Lisbon and Oporto, Portugal (300 interviews in each area), during seven consecutive days from 10 a.m. to 10 p.m. At each predefined period (morning, afternoon, evening), a cash register was randomly selected to approach customers after checkout. During the selected period and register, all customers who bought at least one bottle of wine were interviewed (subject to the interviewers’ availability). The sample size was determined by the available budget. The questionnaire was structured into three sections. The first section collected information on the wine(s) purchased, on the intended consumption occasion(s), on factors influencing the wine choice, and on information sources used. In this study, only the sources of information were considered. The second section included measures of motivations, subjective knowledge, and emotions associated with consumption. Finally, a third section registered buyers’ demographics, including gender.

Regarding the operationalisation of the variables, gender is represented by the effect of being a male, compared to that of being a female. As for the latent variables, the need for information has been operationalised according to Barber (2009), including two items of personal sources and two items of information controlled by the consumer, the latter being reverse scored. The subjective knowledge items are also taken from Barber (2009). To measure motivations, the three positive dimensions proposed by Rossiter and Percy (1991) were included: intellectual (intellectual stimulation, knowledge growth); sensorial (sensory gratification, pleasure); social (consumption as a facilitator of interaction with each other and as an instrument of social approval). The motivational items were developed based on Henley and Donovan (2002), also taking into account the ones used by Duarte et al. (2010) in Portugal. The items of these three dimensions, as well as those of subjective knowledge, were evaluated in a test applied to 217 consumers through confirmatory factor analysis, which resulted in removing some items from the scales: the intellectual, sensorial and social motivation dimensions were down from five to three items each; subjective knowledge went from five to four items. All items were measured on a five-point Likert-type scale: the items related to the need of information on a scale of importance, and the remaining ones on an agreement scale.

**Results**

The sample profile is presented in Table I. Only 523 buyers that replied to all the items covered in this study are considered. The typical buyer is a 48-year-old male, with higher...
education and employed. He mainly buys red wine to consume daily on meals, for a price close to 3€ a bottle. The same table allows us to suggest some differences between genders regarding buying behaviour: males spend more money on wine because they buy more and consume more regularly – 4/5 of males, compared to 2/3 of females, consume more than once a week. Although both prefer to buy red wine, there is a higher proportion of females (29 per cent) than males (20 per cent) buying mostly white or pink wines.

Having identified the main gender differences in relation to purchasing and consumption behaviours, the next step is to analyse the differences in motivation, information and
subjective knowledge measures. However, prior to this analysis, it is necessary to validate the corresponding measurement scales, taking into account the indications suggested by the literature, especially for the convergent validity and the composite reliability (Fornell and Larcker, 1981; Hair et al., 2010). Confirmatory factor analysis is the suitable statistical technique to assess validity and reliability. Table II presents all factor loadings $\lambda$ and respective variances extracted $\lambda^2$, which is the proportion of the item variance explained by the respective latent variable. As can be seen in Table III, every factor presents average variance extracted (AVE) and composite reliability (CR) above the reference values, respectively 0.5 and 0.7. According to generally accepted reference values (Byrne, 2016), the

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>$\lambda$</th>
<th>$\lambda^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjective knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I fairly know the characteristics of wine from the different Portuguese regions</td>
<td>3.58</td>
<td>0.679</td>
<td>0.461</td>
</tr>
<tr>
<td>I know more about wine than the average person</td>
<td>2.84</td>
<td>0.848</td>
<td>0.719</td>
</tr>
<tr>
<td>I know a lot about wine related subjects</td>
<td>2.85</td>
<td>0.835</td>
<td>0.697</td>
</tr>
<tr>
<td>I am sure about my ability to choose the right wine</td>
<td>3.45</td>
<td>0.664</td>
<td>0.441</td>
</tr>
<tr>
<td>Need of information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous knowledge (R)</td>
<td>1.92</td>
<td>0.717</td>
<td>0.514</td>
</tr>
<tr>
<td>Experience (R)</td>
<td>3.11</td>
<td>0.689</td>
<td>0.475</td>
</tr>
<tr>
<td>Shop employees</td>
<td>2.14</td>
<td>0.731</td>
<td>0.534</td>
</tr>
<tr>
<td>Friends</td>
<td>2.81</td>
<td>0.736</td>
<td>0.542</td>
</tr>
<tr>
<td>Sensorial gratification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like the wine tasting flavour</td>
<td>4.55</td>
<td>0.768</td>
<td>0.590</td>
</tr>
<tr>
<td>Wine helps me to better appreciate a meal</td>
<td>4.52</td>
<td>0.670</td>
<td>0.449</td>
</tr>
<tr>
<td>Wine gives me pleasure</td>
<td>4.31</td>
<td>0.682</td>
<td>0.465</td>
</tr>
<tr>
<td>Intellectual stimulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to know more about wines</td>
<td>3.74</td>
<td>0.741</td>
<td>0.549</td>
</tr>
<tr>
<td>I like learning about wine characteristics which are associated with the various wine varieties</td>
<td>3.77</td>
<td>0.824</td>
<td>0.679</td>
</tr>
<tr>
<td>I intend to know many brands of wine</td>
<td>3.08</td>
<td>0.641</td>
<td>0.411</td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wine makes my interaction with others easier</td>
<td>3.01</td>
<td>0.702</td>
<td>0.493</td>
</tr>
<tr>
<td>Drinking wine helps me to feel integrated in my group of friends</td>
<td>2.50</td>
<td>0.808</td>
<td>0.653</td>
</tr>
<tr>
<td>Wine helps me having new friends</td>
<td>2.30</td>
<td>0.815</td>
<td>0.664</td>
</tr>
</tbody>
</table>

Notes: $\lambda$: factor loading; $\lambda^2$: extracted variance; (R) reverse scored

<table>
<thead>
<tr>
<th>Latent variable</th>
<th>CR</th>
<th>AVE</th>
<th>Mean score</th>
<th>Difference M-F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjective knowledge</td>
<td>0.845</td>
<td>0.580</td>
<td>3.155</td>
<td>0.440</td>
<td>0.001</td>
</tr>
<tr>
<td>Need for information</td>
<td>0.810</td>
<td>0.516</td>
<td>2.496</td>
<td>-0.493</td>
<td>0.025</td>
</tr>
<tr>
<td>Intellectual stimulation</td>
<td>0.781</td>
<td>0.546</td>
<td>3.500</td>
<td>0.274</td>
<td>0.001</td>
</tr>
<tr>
<td>Sensorial gratification</td>
<td>0.750</td>
<td>0.501</td>
<td>4.471</td>
<td>0.127</td>
<td>0.008</td>
</tr>
<tr>
<td>Social</td>
<td>0.820</td>
<td>0.603</td>
<td>2.382</td>
<td>0.199</td>
<td>0.037</td>
</tr>
</tbody>
</table>

Notes: CR: Composite reliability; AVE: Average variance extracted; F: Females; M: Males; the significance of mean differences was obtained by bootstrap
measurement model has adequate goodness of fit indicators: $\chi^2$/d.f. = 3.308; CFI = 0.927; GFI = 0.936; RMSEA = 0.066; $p[\text{RMSEA} \leq 0.05] < 0.007$. Goodness of fit could have been improved by allowing some correlated errors, but this step was not followed, as it could underestimates the relationships between latent variables.

Tables II and III also show the average scores of the items and of the scales, respectively. The motivation for sensorial gratification presents the highest scores. Intellectual stimulation items have scores above the scale’s central point. The subjective knowledge measure is near the midpoint, while social motivation and the need of information have lower average values. Through a multi-group confirmatory factor analysis, the difference between males and females was estimated in latent variable scores. Table III shows the scores, the difference and the respective significance, estimated by bootstrap. Compared to males, which represent most of the sample, female buyers distinguish themselves by expressing a greater need for information, and lesser subjective knowledge. With regard to motivation factors, gender differences are smaller, but it still can be seen that males are more motivated in particular by intellectual stimulation. These results support $H1.1$ (males believe to have more knowledge), $H1.2$ (females feel more information needs) and $H1.3$ (males value intellectual stimulation more than females). Conversely, $H1.4$, which postulated females’ greater social motivation, cannot be confirmed.

To evaluate $H2$, the way in which gender differences can be attributed to males’ greater subjective knowledge, a path analysis was modelled with an exogenous variable (gender, fixed in the males’ category), a mediating variable (subjective knowledge) and four dependent variables (information and motivations) with correlated measurement errors. Following the indications of Shrout and Bolger (2002), the bootstrapping method (with 2,000 samples) was used to calculate the significance and the confidence intervals of the estimated direct and indirect effects, which are shown in Figure 1.

The regression results (Table IV) support both mediation hypotheses, that is, females seek more personal information because they have less subjective knowledge and males are more motivated for wine mastering because they have more subjective knowledge. Indeed, in Table IV, it is quite evident that the differences between genders concerning motivation and information needs presented in Table III do not hold after the mediation analysis. The estimates show that gender only affects directly the subjective knowledge ($\beta = 0.237, p = 0.001$), which in turn negatively affects information need ($\beta = -0.145, p = 0.007$) and positively affects motivation to buy, particularly for intellectual stimulation ($\beta = 0.563, p =$
The mediation is apparent in Figure 1, revealing that, because male buyers think they know more about wine, they feel more motivated and feel less need to get external information to make a purchase. All indirect effect coefficients are significant at the $p < 0.001$ level.

Considering that the establishment of a direct relationship between the gender of the buyer and the motivations for the purchase of wine is at issue, it is suggested that the associations identified by Thach (2012) should be mediated by other factors, namely, the subjective knowledge. The most consistent explanation will be that the association observed between gender and motivations is due to the fact that males reveal more subjective knowledge about wines, and, probably due to their self-confidence and perceived decision effectiveness, they feel more motivated to buy. Although the effect is much more significant for intellectual stimulation, as expected, there may be a halo effect on the other motivational dimensions. However, the interpretation proposed here, to be confirmed in future researches, is that subjective knowledge also promotes sensorial gratification and social motivation for wine buying and drinking. On one hand, in view of Thach’s (2012) results, it is reasonable to admit that for the self-confident buyers, knowledge of wines facilitates interaction, helps integration, and is an excuse to socialise. On the other hand, it is logical to consider that knowledge promotes wine sensorial gratification (Bruwer et al., 2011). Finally, the fact that males have higher scores in all motivation facets (Table III) and that subjective knowledge also favour them all (Table IV) may be due to the greater involvement of males with this product category, probably because traditionally it has been a man’s role to be judged by his wine knowledge in familiar and social contexts (Bruwer et al., 2011). This type of results is consistent with those acknowledged by Vandecasteele and Geuens (2010) for the acceptance of innovations, where males exhibited greater propensity for hedonic, social, and cognitive innovation dimensions.

Conclusions, implications, limitations and future research
This paper’s main objective was to analyse the role of subjective knowledge as a mediator of the gender effects on the motivations for purchasing wine, as well as on the use of information for wine choice. The results could mark a theoretical advance by suggesting that much of the gender differences described in the literature are due to other factors, which are proximal antecedents of motivations and information search. This seems to be the case for subjective knowledge. Male buyers prove to see themselves as more knowledgeable in wines and this explains why, compared to women, they use less personal information

<table>
<thead>
<tr>
<th>Regression path</th>
<th>Estimate</th>
<th>Lower bound</th>
<th>Higher bound</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male → Knowledge</td>
<td>0.237</td>
<td>0.158</td>
<td>0.323</td>
<td>0.001</td>
</tr>
<tr>
<td>Male → Intellectual</td>
<td>0.013</td>
<td>-0.062</td>
<td>0.084</td>
<td>0.750</td>
</tr>
<tr>
<td>Male → Sensorial</td>
<td>0.007</td>
<td>-0.071</td>
<td>0.099</td>
<td>0.832</td>
</tr>
<tr>
<td>Male → Social</td>
<td>0.030</td>
<td>-0.054</td>
<td>0.117</td>
<td>0.494</td>
</tr>
<tr>
<td>Male → Information</td>
<td>-0.073</td>
<td>-0.154</td>
<td>0.021</td>
<td>0.124</td>
</tr>
<tr>
<td>Knowledge → Intellectual</td>
<td>0.563</td>
<td>0.481</td>
<td>0.630</td>
<td>0.001</td>
</tr>
<tr>
<td>Knowledge → Sensorial</td>
<td>0.408</td>
<td>0.319</td>
<td>0.491</td>
<td>0.001</td>
</tr>
<tr>
<td>Knowledge → Social</td>
<td>0.241</td>
<td>0.145</td>
<td>0.326</td>
<td>0.001</td>
</tr>
<tr>
<td>Knowledge → Information</td>
<td>-0.145</td>
<td>-0.233</td>
<td>-0.043</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Table IV. Standardized direct effects

Note: The confidence interval and the significance were obtained by bootstrap
sources and are more motivated to purchase. The descriptive analysis also showed that males buy larger quantities and consume more regularly, but the possible mediation of knowledge in behaviour was not evaluated as it was not the purpose of this research.

In fact, this study confirms the expectation that Portuguese male and female consumers who buy wine at hypermarkets diverge in the way they use information during the decision process. Men claim to rely more on knowledge from previous experience, while women resort more often to advice from friends or from salespeople. However, the results presented suggest that this gender effect disappears after controlling for subjective knowledge, meaning that consumers who are equally confident on their knowledge use the same information search strategy regardless of gender (Barber et al., 2009). So, what seems to differentiate the genders is the confidence on one’s knowledge about wines. Despite of traditionally gendered consumer roles having changed, as Portugal evolved over the past 50 years from a closed rural conservative society to a postmodern Western society with a more open and more gender-balanced culture, Portuguese men may still value the importance of showing wine knowledge much more than women do.

Taking this into account, it is suggested that, in general, the marketing communication should emphasise the feeling of self-confidence and perceived effectiveness of consumers with greater perceived category knowledge. Exposure to impersonal advertising – for instance on the Internet – is an effective way of reinforcing subjective knowledge for self-confident people (Bishop and Barber, 2012). In a context of purchasing in hypermarkets, these consumers may also be receptive to marketing actions that promote opportunities for knowledge development. As for the less experienced female audience, this retail channel suffers from limited interaction and scarce personal information, which may be surpassed by specific occasional actions aimed at this target. Since the share of females in the oenology field is increasing, it would be interesting to have female oenologists promoting or endorsing such actions.

The scientific literature about wine consumer behaviour has suggested a number of different marketing strategies for men and women in several countries. This paper suggests that the consumers’ confidence about the knowledge of the product category may be more important than gender. However, one needs to be cautious regarding the strength of this conclusion, given the circumstance that the buyers’ sample was obtained only in one hypermarket chain in the Lisbon and Oporto areas, which burdens the generalisation of the results of this research with certain limitations. The sample shows an overrepresentation of well-educated, heavy drinking males and the overwhelming majority of purchases involved were essentially of affordable wines. Given that more experienced consumers attend specialised stores (Vigar-Ellis et al., 2015) and that females value personal information in the shopping environment (Babakus and Yavas, 2008), it would be advisable to enquire buyers in several retail outlets, which was not affordable on this project budget. On the other hand, a qualitative approach could bring an additional insight, particularly to confirm and interpret the impact of subjective knowledge on the three motivations to purchase and to assess if subjective knowledge still impacts on different information search strategies when buying expensive wines for special occasions.

References


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Number 4

373 Editorial advisory board

374 From firm’s brand identity to cluster’s brand identity: a web-based analysis of Tuscan wineries
Matteo Devigili, Tommaso Pucci and Lorenzo Zanni

394 Positioning of wine tourism websites across different country winescapes: a lexical analyses and implications
Mario Cassar, Albert Caruana and Joseph Vella

410 Advertising efficiency in the Spanish beer industry: spending too much?
Ricardo Sellers-Rubio

428 Q-methodology: theoretical framework for policy making in the Croatian wine sector
Lucijano Jakšić, Edouard Ivanjko and Mario Njavro

446 Does innovation propensity influence wineries’ distribution channel decisions?
Gian Luca Casali, Mirko Perano, Angelo Presenza and Tindara Abbate

463 Do implicit and explicit attitudes explain organic wine purchase intention? An attitudinal segmentation approach
Francisco Sarabia-Andreu and Francisco J. Sarabia-Sánchez

481 Gender, knowledge and motivation for wine purchasing
Carlos Peixeira Marques and Ana Teresa Bernardo Guia