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The consumer trail: Applying best-worst scaling to classical wine attributes

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Abstract

The main goal of this study is to gain a better understanding of the buying behavior of wine consumers in Portugal. More specifically, the study identifies extrinsic attributes that influence wine purchase choices in a retail store, crossing-tabulating the results with six classification variables. The authors use the best-worst scaling method with eighteen reference attributes for designing, implementing, and analyzing responses to a survey of 250 wine buyers. Results reveal that the most significant reference attribute is whether consumers had tasted the wine previously. These findings for Portugal are in accordance with what has been observed in other Western countries. The second most important attribute, region of origin, is also commonly identified in the literature as a significant attribute. The classification variables of age and gender help to explain the behavior of the majority attributes. Using a latent class analysis, the authors obtained a set of three segments that are representative of Portuguese wine consumers. The findings presented here have important implications for wineries and wine distributors in their efforts to know their consumers better in an off-premise context and thereby to maximize profit.

Keywords: Wine attributes; Consumer choice; Off-premise setting; Best-worst scaling; Wine consumer

1. Introduction

Research on consumer behavior in retail contexts has assumed a special significance in recent years as globalization and a proliferation of brands and products, particularly in the food sector, have made the understanding of consumer choice and brand salience crucial to the success of firms (Dolbec and Chebat, 2013; Hamlin et al., 2012; Grisaffe and Nguyen, 2011; Waterlander et al., 2011; Thomson et al., 2005). Among food products, consumer behavior with respect to wine has been the focus of numerous empirical research studies, with 100 refereed articles published between 2004 and 2012 alone (Lockshin and Corsi, 2012). This increasing interest is in part due to the increasing cultural value that is associated with wine by urban consumers, for whom the choice of a wine has become a complex and challenging task (Allen and Germov, 2010). The wine trade has for its part experienced increased production, the economic impact of which is significant. As matter of fact, in 2015, according OIV (2016), the world wine trade increased by 1.8% in terms of volume (to 104.3 million hectoliters) and by an even more impressive 10.6% (to 28.3 billion EUR) in terms of value compared with 2014. Owing to an excess supply of wine, however, the sector has been experiencing downward pressure on prices and a difficult environment for brand-building (Rannekleiv et al., 2012). Because the hundreds of referrals in the market and the emergence of new brands and sub-brands, choosing a wine in a retail store has become a complex and difficult task that many Western consumers find intimidating (Lockshin, 2003; Sutanonpaiboon and Atkin, 2012). The myriad of items on offer, similarity in format, price diversity, and the increasing gap between ordinary consumers' knowledge and the complexity of the choices before them, are all factors that wine buyers must face. As pointed out by Perrouty et al. (2006), those who wish to purchase wine may experience confusion owing to a

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number of cues on the label, such as brand name, region, and grape variety. Moreover, because wine carries strong social connotations, it is often felt to be an important purchase decision, even if it is not always an expensive one (Barber et al., 2009). In order to protect themselves, consumers value a set of intrinsic and extrinsic attributes that are complex in nature and therefore difficult to identify in terms of their relevance to consumption; and because intrinsic attributes are difficult to assess prior to purchase, buying behavior is often based on extrinsic cues (Cohen, 2009). Several studies conducted in different geographical contexts have focused on such attributes as tasted the wine previously, matching to food, origin of the wine, I read about it, grape variety, someone recommended it, brand name; medals/awards, attractive front label, and alcohol level below 13% (Casini et al., 2009; Cohen, 2009; Goodman, 2009; Jaeger et al., 2009; Allen and Germov, 2010). A comparative review of the results of these studies reveals some inconsistencies among the rated attributes and thus points to the need for further research, since an explanation of how these factors influence consumers would be of great interest to producers, entrepreneurs, and marketers. There is a particular need for insight into the off-premise setting, since more often than not, as just discussed, consumers are faced with a large number of items from which to select.

Various studies have developed a number of methods for collecting data on wine consumers' preferences. Lockshin and Hall (2003) survey the large number of studies of consumer behavior regarding wine based on simple rating scales methods. Finn and Louviere (1992), on the other hand, have drawn attention to the limitations of methods based on simple ordering of attributes in terms of the difficulty of interpreting and validating new attributes and the impossibility of conducting comparisons among them. Goodman et al. (2005), Remaud and Lockshin (2009), and Casini et al. (2009) agree that one way to avoid the bias inherent in simple ordering methods is to apply methods based on discrete choice (scaling methods), which allow consumers to set the level of preference for a particular attribute.

Best-worst scaling (BWS), also known as Max-Diffs, derives from the discrete choice method (Finn and Louviere, 1992; Marley and Louviere, 2005) and has become a popular method for studying the importance of a particular issue to an individual or group relative to other issues (Burke et al., 2013). BWS was introduced by Finn and Louviere (1992), who used it to measure public concern about food safety, and it has since been applied in various contexts, including the social sciences, consumer behavior, and health care (Burke et al., 2013; Cohen, 2009; Dekhili et al., 2011; Flynn et al., 2010; Jones et al., 2013; Marti, 2012).

BWS has gained in popularity because it is thought to have greater discriminatory power than other scale measures (Sirieix et al., 2011) and to allow for better comparisons among countries and segments (Cohen and Neira, 2004). Rather than being asked to rate items one at a time, respondents are shown a predefined set of candidate items, from which are asked to choose one each that they consider the best and the worst (Finn and Louviere, 1992). Two main advantages are associated with BWS methodology: first, it involves a fairly simple task for respondents, since it is less cognitively demanding to select extremes on a scale than to rank all items simultaneously (Burke et al., 2013; Erdem et al., 2012; Jones et al., 2013); second, it provides sufficient information to the researcher so that precise and comparable individual-level scales can be calculated (Burke et al., 2013; Jones et al., 2013; Louviere and Islam, 2008; Marti, 2012). Moreover, a growing body of literature has used the BWS to generate empirical findings that have contributed to a deeper understanding of the rationale behind wine purchases (Sirieix et al., 2011; Goodman et al., 2005; Remaud and Lockshin, 2009).

In the specific case of the Portuguese wine market, to our knowledge, no national study of wine consumers' preferences in a retail setting has yet been undertaken using BWS. This is a particularly significant gap given that Portugal is a mature wine market characterized by great product diversity. The present research accordingly explores Portuguese wine consumers' preferences in a retail environment. First, we seek to explore how eighteen extrinsic attributes affect consumer choice at the moment when a bottle of wine is purchased for a special meal. Second, we seek to identify correlations among such classification variables as age and income level and the focus attributes. Finally, we suggest, based on our findings, ways to diminish the heterogeneity of wine consumers by identifying segments with recognizable their main features.

2. Methods

2.1. Questionnaire design

A two-part questionnaire was developed for this study. The questionnaire was prefaced by an explanation that its purpose was to identify the most important attributes when choosing a wine in a store. The first part of the survey included six classification questions (variables): gender, age, place of residence, frequency of wine consumption, involvement in the wine sector, and income level. The second and main part of the survey was designed to measure the importance that the respondents attached to specific attributes of wine using the BWS method. Interviewees were asked to consider a hypothetical situation in which they needed to purchase a wine that they would offer to friends during a special dinner. Eighteen specific attributes of wine purchasing decisions were selected (Table 1). Fifteen of these were chosen based on previous studies (Loose and Lockshin, 2013; Goodman et al., 2005; Goodman, 2009; Casini et al., 2009; Jaeger et al., 2009; Cohen, 2009; Corduas et al., 2013; Madureira and Nunes, 2013), and the remaining three were new attributes introduced by the researchers (namely, attributes 16–18 in Table 1). In order to stress the importance of the attribute price, we decided to consider a price below €10, thus simplifying the buying decision process by lowering the level of risk (financial, social and/or emotional), as well as a price above €15, in order to evaluate the more complex decision process regarding wines with a higher purchasing risk. The third new attribute introduced, controlled denomination of origin (CDO), is

mentioned in the literature (Corduas et al. 2013; Mtimet and Albisu, 2006; Chiffoleau et al., 2006; Duarte et al., 2010) and is particularly relevant to the Portuguese wine sector, where there are 31 CDO/RO (region of origin) regions. The authors also attempt to clarify differences in consumers' perceptions regarding CDO and RO regions.

In this study, the eighteen attributes were combined into eighteen choice sets of four items each, and respondents were asked to select the best and worst attribute in each set, i.e., the most and least important attribute of the decision to purchase a specific wine. Four or five items per set are regarded as optimal for respondent evaluation, since a greater number could lead to respondent fatigue (Sawtooth Software Inc., 2013). The question sets were balanced in factor frequency, positional frequency, and orthogonality and therefore satisfy optimal design characteristics according to Sawtooth Software (2013). As a consequence, each attribute appears the same number of times across all choice sets, and each pair of attributes appears only once within each set. Multiple versions of the survey were generated in order to increase variation in the position and combination of attributes across respondents, thereby reducing any potential context bias (Sawtooth Software Inc., 2013).

Table 1
Wine attributes.

1	Tasted the wine previously
2	Recommended by friends/relatives
3	Grape variety or varieties
4	Region of origin
5	Brand name
6	Producer/winery name on the bottle
7	Medal/award, visible on the bottle
8	Suggested by experts in the media
9	Matching food
10	Information on back label
11	Promotional display in-store
12	Attractive front label
13	Alcohol level
14	Winemaker name on the bottle
15	Bottle characteristics (color and shape)
16	Price below 10 Euros
17	Price above 15 Euros
18	Controlled Denomination of Origin (CDO) of wine

2.2. Sampling method and survey administration

A snowball sampling strategy was adopted. Respondents were recruited based on their access to the web and willingness to collaborate. The survey links were first distributed through email. Our invitation to participate in the survey also asked participants to share it through mail or social media with family members, friends, and colleagues aged 25 years or older and living in Portugal. The survey was administered from July to August 2014.

In order to guarantee representativeness, we applied weighting factors to the initial sample and then calculated the outputs (Malhotra, 2004; Oliveira, 2012). To do so, we compared the initial sample with the ideal (representative) sample using the cross-classification variables gender x age x region. We obtained a $\chi^2 = 153.2317; df = 39; p = 0.0000$, which indicated that the initial sample was not representative. Therefore, a K weighting factor was estimated for each cell and then applied to the initial sample frequency in order to obtain a representative sample (Table 2).

Finally, after comparing the initial sample with the representative sample, chi-square values were $\chi^2 = 1.149242; df = 39; p = 1.0000$, which means the weighted sample is representative.

2.3. Data analysis

We used a best-worst scaling method as described in Cohen and Markowitz (2002). We began by computing best-worst raw scores for each respondent (individual B–W) for each wine attribute. The square B/W values were then transformed into a standardized ratio scale (0–100) so that the scale presents the standardized importance weights, with the sum of all items being 100. The assumption is that an item is chosen a particular percentage of times when presented together with other items (Sawtooth Software Inc., 2013).

To test the significance of each attribute and of the classification variables, new variables were created by grouping contiguous values of existing ones into five categories. In other words, we created categorical variables (rescaled scores bin) from continuous scale variables (rescaled scores).

Table 2
Weighted sample (age intervals).

	Men				Women				Total
	25/34	35/44	45/54	+54	25/34	35/44	45/54	+54	
North, except Metro Porto	5	6	6	10	5	6	6	13	58
Metro Porto	3	3	3	6	3	4	3	7	32
Centre Region	5	5	5	12	5	6	6	15	59
Metro Lisbon	5	5	4	9	5	6	5	12	51
Pen. Setúbal, Alentejo, Algarve	4	5	4	10	4	5	5	12	50
	22	25	23	47	23	26	25	60	250

To test the significance of the classification variables for each attribute, the rescaled scores were grouped on a five-position scale and thereby categorized into five levels of importance. The continuous values from the minimum to maximum rescaled scores by attribute were converted into a range on the five-point scale. Four cut points (thresholds) were introduced, and the rescaled scores of each attribute were assigned to these five new classes. The intersection of these new ordinal variables (5-point scales) with the classification variables allows us to test whether rows (attributes) and columns (classification variables) are independent or are related by applying the chi-square test.

BWS data is very useful for segmentation analysis because information is gathered in the form of choice responses, which are quite amenable to such modern segmentation methods as LCA models (Cohen and Orme, 2004). Using the rescaled scores, a share of importance/preference index was constructed using Sawtooth software. This calculation is based on the assumption that all attributes have equal importance (Cohen and Neira, 2003).

3. Results

3.1. Respondent characteristics

From a total of 460 responses received, 250 complete responses were retained, the remainder (210) being excluded on grounds of incompleteness or a similar flaw. Table 3 presents the descriptive statistic of the sample population, which is statistically representative of the Portuguese population. Of the 250 respondents, most were women aged 35–44; 107 reported a monthly net income less than 1500 Euros; all drank wine on a weekly basis, and 69 regularly during the week. Respondents were also distributed evenly across Portugal's various geographic areas.

Table 3
Characteristics of survey respondents.

Classification variables	Modalities	No.		%
Gender	Male	116	250	46.4
	Female	134		53.6
Age	25–34 years old	45	250	18.0
	35–44 years old	50		20.0
	45–54 years old	48		19.2
	55 years+	107		42.8
Locale of residence	North. except Metro Oporto	58	250	23.2
	Metro Oporto	32		12.8
	Centre region	59		23.6
	Metro Lisbon	51		20.4
	Pen. Setúbal, Alentejo, Algarve	50		20.0
Consumption frequency	Once a week	91	250	36.4
	Two to five times a week	90		36.0
	Regularly during the week	69		27.6
Involvement in wine sector	Yes	88	250	35.2
	No	162		64.8
Income level:net monthly salary in Euros	Less than 1,500	107	250	42.8
	1500–2499	90		36
	2500+	50		20
	No answer	3		1.2

3.2. Consumer preferred attributes

The analysis of the attributes can be presented in a variety of ways. According to Loose and Lockshin (2013), the standardized ratio scale is reliable, since any less important attribute can be interpreted as a ratio relative to the most important attribute (Table 4).

For convenience, data have been sorted (by decreasing level) and are graphically displayed (Fig. 1).

Of the attributes, tasted the wine previously is unmistakably the most valued (100.0) in the process of choosing a bottle of wine; region of origin (73.2) and recommended by friends/relatives (71.3) are important as well. On the other hand, grape variety or varieties (41.9) and brand name (39.3) are moderately rated by Portuguese wine consumers. Finally, alcohol level (8.7) and bottle characteristics (color and shape) (6.5) are the items ranked lowest, indicating that these attributes are of little significance in the evaluation process that precedes the purchase of a bottle of wine.

3.3. Impact of classification variables over attributes

The intersection of new ordinal variables (five-point scales) with the classification variables allows us to test for independence between rows (attributes) and columns (classification variables) by applying the chi-square test. This statistical procedure evaluates the relationship between the dependent variable (attribute importance) and the independent (classification) variables. Table 5 presents the statistical significance of the relationships between the eighteen select attributes and the classification variables, in which a smaller p value corresponds to a greater probability of relatedness.

Significant correlations can be found between the first three driven preference attributes (tasted the wine previously, region of origin, and recommended by friends/relatives) and two classification variables (gender and age), while these three most valued attributes are not correlated with any of the remaining classification variables. We draw attention to the fact that the two attributes related to price have different correlations with classification variables; for while price below 10 Euros is correlated with age and level of involvement, price above 15 Euros is not correlated with any of the classification variables.

Neither winemaker name on the bottle nor information on back label have any correlation with classification variables. It should be noted that two of the classification variables, level of consumption and income level, have no significant relationship with any of the dependent variables (importance of the attribute). Further, gender and age can be a useful variable for segmenting the global wine market once they are correlated with the majority of attributes. Regarding income level, this apparent inconsistency could be an artifact of the premise of the study, in that the wine being selected is said to be for

Table 4
Raw best and worst, average best-worst, and standardized aggregated importance weights.

Label	Item number	Times selected best	Times selected worst	(B−W)/n	Sqrt (B/W)	Standardized ratio scale	Standardized importance weights (%)
Tasted the wine previously	2	627,3	47.1	2.321	3.65	100.0	16.2
Region of origin	5	519.1	72.8	1.785	2.67	73.2	11.9
Recommended by friends/relatives	3	421.7	62.3	1.437	2.60	71.3	11.6
Matching with food	10	420.1	166.8	1.013	1.59	43.5	7.1
Grape variety or varieties	4	285.5	122.3	0.653	1.53	41.9	6.8
Brand name	7	374.5	181.8	0.771	1.44	39.3	6.4
Controlled Denomination of Origin (CDO)	6	261.5	149.0	0.450	1.32	36.3	5.9
Producer/winery name on the bottle	17	264.3	174.6	0.359	1.23	33.7	5.5
Medal/award. visible on the bottle	8	270.3	223.4	0.188	1.10	30.1	4.9
Suggested by experts in the media	9	195.6	230.8	−0.141	0.92	25.2	4.1
Information on back label	11	182.4	224.5	−0.169	0.90	24.7	4.0
Price below 10 Euros	16	188.4	243.4	−0.220	0.88	24.1	3.9
Price above 15 Euros	15	114.8	305.1	−0.761	0.61	16.8	2.7
Winemaker name on the bottle	18	102.8	339.5	−0.947	0.55	15.1	2.4
Promotional display in-store	12	98.1	408.6	−1.242	0.49	13.4	2.2
Attractive front label	13	74.7	381.9	−1.229	0.44	12.1	2.0
Alcohol level	14	53.3	533.6	−1.921	0.32	8.7	1.4
Bottle characteristics (color and shape)	1	35.1	621.8	−2.347	0.24	6.5	1.1

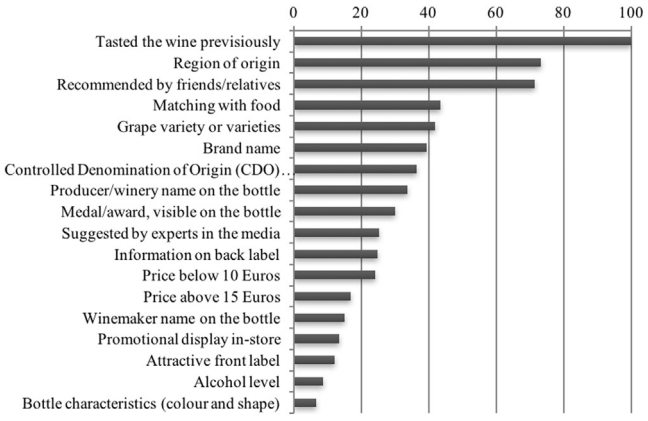

Fig. 1. Standardized ratio scale relating to the eighteen wine attributes.

dinner with friends on a special occasion, potentially resulting in undervaluation by consumers.

3.4. Segmentation of consumers

LCA models are suitable for segmentation strategies, so a share of the importance/preference index was built by applying Sawtooth software to the rescaled scores. Table 6 summarizes the results.

Analyzing the results of the rescheduling, we find that the segments are not perfectly differentiated, in that the attributes tasted the wine previously, recommended by friends/relatives, and region of origin are regarded as important by respondents in all three segments. Nevertheless, when we concentrate on the attributes that present the higher score in each of the three segments (transversal reading), we find some interesting defining characteristics. Thus Segment 1 is the most representative group, accounting for 44.9% of the sample and integrating respondents who assign greater relevance to the attributes matching food, grape variety or varieties and controlled denomination of origin (CDO) wine. This segment can be usefully described as the Expert Consumers group. Segment 2, representing 28.2% of the sample, is composed of respondents who attach the greatest importance to the attribute tasted the wine previously, followed by recommended by friends/relatives, brand name, suggested by experts in the media, price below 10 Euros, price above 15 Euros, attractive front label, promotional display in-store, and bottle characteristics (color and shape). This segment may be designated the Influenced Consumers group. Finally, Segment 3 consists of 26.9% of the sample and includes subjects who care most about region of origin, medal/award visible on the bottle, producer/winery name on the bottle, information on back label, and winemaker name on the bottle, and may be called the Objective Cues Consumers group.

4. Discussion

This study has established a hierarchical relationship among extrinsic attributes that affect Portuguese consumers' choices at the moment of buying a bottle of wine for a special occasion. The results of best-worst analysis have been presented, along with a correlation between classification variables and extrinsic attributes of consumption and a proposed segmentation of consumers. The findings concerning consensus and mismatches in consumers' choices, as well as possible insights into marketing approaches, deserve further discussion.

By applying a BW standardized ratio scale, we have determined that tasted the wine previously, region of origin, and recommended

Table 5
Relationship between the dependent variable (attribute importance) and the independent (classification) variables (chi-square Test).

Attributes	Classification variables Sign p values					
	Gender	Age	Residence region	Level consumption	Level involvement	Level income
Bottle characteristics (color/shape)	0.28	0.35	0.05*	0.24	0.66	0.35
Tasted the wine previously	0.00*	0.00*	0.14	0.38	0.09	0.06
Recommended by friends/relatives	0.00*	0.00*	0.34	0.68	0.29	0.43
Grape variety or varieties	0.02*	0.00*	0.84	0,12	0.09	0.47
Region of origin	0.00*	0.00*	0.63	0.20	0.19	0.55
Controlled Denomination of Origin (CDO) wine	0.02*	0.00*	0.21	0.10	0.25	0.07
Brand name	0.01*	0.00*	0.16	0.12	0.25	0.47
Medal/award, visible in the bottle	0.04*	0.03*	0.50	0.34	0.46	0.67
Suggested by experts in the media	0.00*	0.00*	0.37	0.10	0.17	0.03*
Matching food	0.12	0,00*	0.81	0,02*	0,07	0.09
Information on back label	0.11	0.12	0.28	0.52	0.24	0.86
Promotional display in-store	0.20	0.04*	0.59	0.57	0.09	0.78
Attractive front label	0.02*	0.07	0.19	0.77	0.63	0.13
Alcohol level	0.56	0.03*	0.41	0.14	0.80	0.34
Price above 15 Euros	0.19	0.07	0.68	0.60	0.23	0.64
Price below 10 Euros	0.06	0.02*	0.54	0.90	0.03*	0.10
Producer/winery name on the bottle	0.00*	0.00*	0.42	0.74	0.04*	0.24
Winemaker name on the bottle	0.13	0.15	0.52	0.63	0.16	0.80

*Significant relationships $P \leq 0.05$.

Table 6
Attributes in order of importance by segment.

Attributes	Seg. 1 44.9%	Seg. 2 28.2%	Seg. 3 26.9%
Tasted the wine previously	12.4	15.2	10,0
Recommended by friends/relatives	8.0	12.0	8.6
Region of origin	10.2	9.2	13.8
Matching food	15.7	5.0	1.6
Brand name	6.4	9.1	6.5
Grape variety or varieties	9.5	3.3	7.1
Medal/award, visible in the bottle	4.4	4.0	10.0
Controlled Denomination of Origin (CDO) wine	8.3	3.1	7.1
Producer/winery name on the bottle	4.8	4.9	8,0
Suggested by experts in the media	3.1	7.1	3.9
Price below 10 Euros	3.9	6.8	2.2
Information on back label	3.3	3.2	7.7
Price above 15 Euros	2.8	4.8	1.4
Winemaker name on the bottle	2.3	1.1	6.4
Attractive front label	1.3	4.5	1.9
Promotional display in-store	1.5	3,0	2.5
Alcohol level	1.4	1.6	0.8
Bottle characteristics (color/shape)	0.7	2.1	0.5
Total	100	100	100

by friends/relatives are the three most relevant attributes regarding consumer choice. An initial conclusion is that these three attributes can be considered non-presence attributes, in the sense that determinants of consumers' cues are pre-defined, and thus do not depend on factual information available at the point of purchase (e.g., the bottle and store). These results are in line with those of Forbes et al. (2010), who emphasize the fact that the quality of a wine is unknown until the bottle is opened, so that extrinsic product attributes are frequently used by consumers as heuristic cues to indicate quality.

The consumption behavior of Portuguese wine consumers resembles that of other Western buyers in that tasted the wine previously is often mentioned as the most relevant attribute when buying a bottle of wine in an off-premise context (Batt and Dean, 2000; Casini et al., 2009; Goodman, 2009). This finding is also consistent with the conclusions of Goodman (2009) who, working in a cross-cultural context, found that consumers in eight of twelve countries considered the attribute tasted the wine previously the most important when choosing a wine in a store (Goodman, 2009). The obvious implication is that marketers should focus their efforts on capturing the consumer's state of mind outside the off-premise setting. Although this consideration can resemble the 'chicken and egg dilemma,' it is critical to recognize that the activities of dissemination and promotion prior to purchase, such as participation in wine shows and wine courses, can without doubt affect consumers' choice of wines.

Respondents in the present study considered the region of origin attribute the second most important cue when choosing a special wine in a store. This result is also consistent with recent research on the topic conducted in other Western countries (Remaud and Lockshin, 2009). Thus, for example, Batt and Dean (2000) report that the origin of a wine is the third most important cue; Atkin and Newton (2012) suggest region rather than merely appellations as a promotional strategy to promote wine; and Sutanonpaiboon and Atkin (2012) stress the significance of perceived value of origin as a decision heuristic regarding consumers' choices of wine. These results should have an impact on the promotional strategies that are developed by wineries, distributors, and retailers. In fact, considering that the region of origin is the first face-to-face attribute to be ranked, strategies for promoting brands should emphasize connections to a specific region, particularly

when the region is well known for its wine. It should, however, be noted that not all geo-referenced attributes are equally important. Indeed, the attribute Controlled Denomination of Origin (CDO) cue is ranked seventh, its relative importance but half that of region of origin (RO).

The significance of the attribute recommended by friends/relatives reported here (third) is in contrast with results from similar studies of countries with more consolidated wine cultures, such as France (Goodman, 2009) and Italy (Casini et al., 2009). The contextualization of wine as a social product should accordingly be taken seriously by those who design marketing strategies. Indeed, the relatively high ranking of the recommended by friends/relatives attribute suggests that communication strategies should be developed for relatively more familiar social contexts.

The factor found to be fourth most influential in this study, matching food, was identified as the most important attribute in a study conducted in France (Goodman, 2009), and the second most important in another conducted in Italy (Casini et al., 2009). As alluded to above, these results are to be expected for such advanced gastronomic cultures, where the interconnection of wine with food is decisive and drives consumer preferences for both choices. It is, however, important to emphasize that this attribute is not usually regarded as crucial for marketing strategies aimed at selling wine in stores in the Portuguese domestic market. Largely influenced by frequent discussions of the subject in the media, consumers in most cases lack sufficient knowledge to make a suitable wine and food pairing. It is therefore important for wineries and stakeholders in off-premise settings to internalize these findings and develop appropriate information and awareness campaigns to help consumers select the right wine for the right food.

Although several studies report price to be one of the main attributes affecting purchasing decisions (Orth and Krska, 2002; Mtimet and Albisu, 2006; Lockshin and Corsi, 2012; Duarte et al., 2010), this study found that neither price above 15 Euros nor price below 10 Euros were relevant items. This apparent inconsistency might be explicable in terms of what turns out to be an overly simple approach that takes price to be an abstract value. By presenting respondents with two price levels (each associated with a simple or complex decision purchase process), however, the variable price becomes quantified. This move seems to promote greater price awareness by forcing consumers to respond in an objective manner. While it is difficult to contextualize this observation owing to the apparent lack of relevant literature on the subject, it should still be of particular interest for entrepreneurs and marketers. Indeed, if further research confirms these findings, it may be possible to conclude that Portuguese consumers are not particularly price-sensitive when selecting a wine for a special occasion.

Turning briefly to two other attributes, promotional display in-store ranks fifteenth, which indicates that promotional efforts may have an impact on consumers' likelihood of buying a specific bottle of wine. Marketers should thus perhaps expect low returns from static promotional activities in stores. Sixteenth is attractive.

Front label, a ranking that should be of particular interest to the large number of wine companies in Portugal that invest relatively large amounts in innovative labeling and might do better instead to rebuild their product and communication strategies.

Our analysis of the relationships among the attributes and the classification variables, then, reveals significant correlations between tasted the wine previously, region of origin, and recommended by friends/relatives and the classification variables age and gender. Moreover, these two classification variables are significantly correlated with the majority of the remaining attributes. These facts, together with the absence of significant correlations between the attributes and residence region, level of consumption, level of involvement, and level of income, highlight the importance of age and gender as segmentation variables. Further results are in line with those of a number of other researchers, including Chang et al. (2016), Thach and Olsen (2015), Forbes (2012), Atkin and Sutanonpaiboon (2007), and Barber et al. (2006).

As pointed out by McMillan (2013), the increasing level of segmentation of current consumers is helping wineries and distributors to become more efficient in their marketing efforts, thus increasing sales and capturing consumers with greater added value. Many companies in Portugal currently place their wines on the domestic market without considering the possibility of using segmentation strategies, probably because of the high level of heterogeneity that characterizes the domestic wine market and the limited research available on the subject. A significant number of brands and wineries thus arguably waste resources on inadequate strategies because they are unable to identify the needs and expectations of their various wine consumer segments. This study has identified three key segments, termed the **Expert**, **Influenced**, and **Objective Cues Consumers** groups. The **Expert Consumers** (44.9%), the most relevant group, value matching food issues, technical information about grape varieties, and information about Controlled Denomination of Origin (CDO). These consumers seek a deep understanding of enogastronomy and the identity of a wine. For members of this segment, wine is much more than just a drink in a bottle. This study draws attention to the relevance of CDO for expert consumers. Indeed, this segment can be identified by a set of specialized attributes indicative of highly conscientious wine-buying behavior.

The second segment, Influenced Consumers (28.2%), values a wide variety of mostly subjective attributes, such as sensory experiences and brand and bottle aesthetics. In addition, price below 10 Euros and price above 15 Euros are relevant. These consumers seem to seek attributes that in some manner diminish the purchasing risk and provide guarantee cues to access wine quality.

Members of the third segment, **Objective Cues Consumers** (26.9%), attach greater importance to such relatively more objective attributes as region of origin, medal/awards visible on the bottle, and producer/winery name on the bottle. These consumers still use purchasing cues, but ones that are more objective and targeted than those used by influenced consumers. Despite their insecurity, objective cues consumers show

a willingness to learn and prefer more detailed information, as marketers would do well to note.

By presenting three groups of wine consumers, this study aims to provide the wine industry a fresh perspective that can be incorporated into comprehensive marketing strategies that maximize a wine's competitive position. More research is needed to understand the Portuguese wine consumer better in both on- and off-premise settings. The present study is intended as a contribution to this deserving topic. Given the robustness of the BWS, the findings presented here are significant in their own right and as a foundation for future research.

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