

# Consumer preferences and purchasing rationales for wine: A multivariate data analysis

CARLA FERREIRA\*, JOÃO REBELO\*\*, LINA LOURENÇO-GOMES\*\*,  
ELISETE CORREIA\*\*\*, PHILIPPE BAUMERT\*\*\*\*, CHRISTINE PLUMEJEAUD\*\*\*\*\*

DOI: 10.30682/nm2004i

JEL codes: D10, D12, Q13

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## Abstract

*The wine market is very heterogeneous and complex, being the knowledge of the behaviour and attitudes of consumers a key tool to design efficient marketing plans, namely in countries that are traditionally wine producers and consumers, such as Portugal. In this country, Port wine is an economic and cultural icon, but, in the last decade, total sales have been decreasing. Despite this trend the domestic consumption has been gaining relevance and therefore a focus to reverse the negative cycle of total sales. The main goal of this paper is to analyse the profile and behaviour of domestic Port wine consumers, identifying homogeneous market segments. For this purpose, an online survey was applied and random sample of 678 Portuguese Port wine consumers was collected. Using multivariate statistical techniques, three profiles of purchasers/consumers emerged: experienced, less experienced and inexperienced consumers. This segmentation shows that Port wine consumers can be grouped according to their involvement with the product, consumption occasion and price they are willing to pay. In addition to the academic contribution of wine market segmentation, the paper provides useful insights to be used in designing marketing plans, both by institutional stakeholders and wineries.*

**Keywords:** *Multivariate statistical techniques, Market segmentation, Wine consumers, Wine economics.*

## 1. Introduction

Over the last five decades, wine market has witnessed an increasing competition. The wine industry was forced to develop competitive strategies able to face new challenges, both on

supply and demand side. The wine industry has become a typical case of monopolistic competition structure characterized by a large number of wineries with different strategies and several wine denominations, styles and brands. In this

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\* Center for Industrial and Technology Management, University of Minho, Guimarães, Portugal.

\*\* Department of Economics, Sociology and Management (DESG), Centre for Transdisciplinary Development Studies (CETRAD), University of Trás-os-Montes and Alto Douro (UTAD), Vila Real, Portugal.

\*\*\* Center for Computational and Stochastic Mathematics (CEMAT), Department of Mathematics, IST-UL, Lisboa, Portugal.

\*\*\*\* Institute of cultural and international studies (University of Versailles Saint-Quentin-en-Yvelines) / CNRS, Université Bordeaux Montaigne, Domaine Universitaire, Pessac, France.

\*\*\*\*\* University of La Rochelle, La Rochelle, France.

Corresponding author: carlacrisfe@gmail.com

setting, the process underlying the wine choice is a complex task and, therefore, consumers tend to adopt risk reduction strategies, in order to reduce the chance of a bad choice, namely: information research, brand loyalty, price and past consumption experience (Bruwer and Rawbone-Viljoen, 2012). Additionally, challenges regarding the patterns of wine consumption arise from the presence of new consumers with specific cultural background, and different purchasing habits, behaviour, and preferences.

Given the diversity of wine consumers, it is expected that different motivations and constraints underpin the wine choice process. Thus, wine market segmentation has been broadly applied to achieve homogeneous consumers' groups with similar needs and wishes, according to several variables, such as socio-demographic, psychographic or behavioural (Johnson *et al.*, 2017). Particularly, the related literature reports different consumer profiles for still wines. However, due to the highly differentiated nature of wine, the results are product-specific and hard to generalize. There is no evidence if these findings can be transferred and generalized to another typology of wines, such as fortified wines.

Port wine is a fortified wine with a long history in the market and with specific characteristics related to the *terroir* for which standards, habits and motivations of consumption are expected to be also very specific. It is produced in Portugal, a traditional wine producing-consuming country, more specifically in the Douro Demarcated Region (DDR). The soil and climatic physiognomies of this region influence the sensorial and chemical features of Port wine, which explains the production of several categories with distinctive market positioning. In spite of a long history of production and internationalization, Port wine faces a negative trend of consumption that could be a signal of it having become a non-fashionable drink when compared with other alcoholic beverages. In total, from 2006 to 2016, Port wine sales decreased 16%, in volume, and 5% in value, while domestic consumption decreased 3.3% in volume, but grew in value at an average annual rate of 1%. In 2016, the Portuguese market accounted for 17%, in volume, and 19%, in value, of total sales, ranking second, after the French market. In this way, the inversion

of the decreasing trend in total Port wine sales, demands for a better knowledge of the Portuguese market and its consumer's segmentation.

Although consumer segments for still wines have been identified in the literature, there is a lack of research regarding to the consumption patterns of fortified wine, in particular, of Port wine in Portugal. The main objective of the present article is to fill in the gap identified in the literature to look for distinct consumption and behavioural patterns of Port wine consumers. The paper contributes to deepen the scientific knowledge about Port wine consumers' preferences and attitudes, and provides guidelines that are also useful for supporting the development of marketing strategies, both at institutional and managerial level. It constitutes a starting point for tailoring marketing strategies aimed at specific market segments, with a particular emphasis for companies working or intending to act in Port wine market.

The present paper is organized as follows: Section 2 comprises a brief literature review, including segmentation methods and variables; Section 3 describes the survey design and presents the data; methods and results are presented in Section 4; and, finally, the main conclusions and recommendations for future research are discussed in Section 5.

## 2. Literature review

Wine is an experience good whose main attributes can only be evaluated at the moment of consumption, and therefore the consumer's ability to gauge quality prior to consumption is very low. Additionally, wine is a multifaceted product with a wide range of intrinsic and extrinsic quality cues. The characteristics that are desirable to consumers when they choose a wine are not homogeneous and must be identified. Based on this information, producers may develop products for differing segments of consumers.

Still wine consumers have been typically segmented with clustering techniques according to behavioural segmentation criteria (e.g., Spawton, 1991; Hall, 1999; Aurifeille *et al.*, 2002; Thomas and Pickering, 2003; Kalazić *et al.*, 2010; Duarte *et al.*, 2010; Liu *et al.*, 2014; Thach and Olsen, 2015) or sociodemographic factors (e.g., Barber

*et al.*, 2008; Wolf *et al.*, 2018). Some studies have applied multivariate statistical techniques, such as, for example, those by Di Vita *et al.* (2014) and Kelley *et al.* (2015). In same line, Callieris *et al.* (2016) applied a cluster analysis to identify organic consumers in Tunisia.

Based on expectations and risk-reduction strategies, Spawton (1991) found four different groups in the Australian still wine market, namely the *connoisseurs*, *aspirational drinkers*, *beverage wine consumers*, and *new wine drinkers*. Later, using covariates on choice and consumption behaviour, Hall (1999) confirmed the evidence of Spawton (1991), but suggested changing the *new wine drinkers* segment to an *enjoyment-oriented* segment that is characterized by young wine drinkers who drink out of the home to have a good time. Using still wine involvement factors, Aurifeille *et al.* (2002) showed that some groups were analogous between Australian and French still wine consumers. Thomas and Pickering (2003) segmented the New Zealand still wine market into *heavy*, *medium*, and *light* wine purchasers. Kalazić *et al.* (2010) segmented the Croatian still wine market based on purchasing power and brand sensitivity variables. Six consumer groups were identified: *prestigious consumers*, *experts*, *traditional consumers*, *hedonists*, *savers*, and *modest consumers*. Liu *et al.* (2014) clustered Chinese still wine customers into *intrinsic-attribute-seeking*, *extrinsic-attribute-seeking*, and *alcohol-level-attribute-seeking*.

A multivariate statistical analysis was applied by Di Vita *et al.* (2014) to segment the Italian still wine market into *high-quality-demanding purchasers*, *occasional consumers*, and *basic consumers*. Kelley *et al.* (2015) segmented the US still wine market based on consumption frequency and found *super core drink*, *core drink*, and *marginal drink* consumer segments that are distinct in terms of generation and gender. Thach and Olsen (2015) also examined the US still wine market based on wine consumption frequency by price segment and found three homogeneous groups: *high*, *moderate*, and *low* spenders.

Duarte *et al.* (2010) clustered the Portuguese still wine market based on purchasing and consumption behaviour. Three consumers' segments were found: *enthusiast*, *infrequent*, and *convivial* wine drinkers. This research showed that younger generations of Portuguese people are convivial and less frequent wine consumers, and they usually perceive higher prices to be synonymous with quality.

With respect to sociodemographic factors, Cardillo *et al.* (2017) highlight the influence of these factors on consumer behaviour. In general, young people demonstrate less emotional brand linkage. For instance, with regard to the younger generations, Barber *et al.* (2009) recommended that wine branding should focus on social aspects of wine rather than on the specific product attributes. The literature has shown that the attributes sought by the still wine consumer seem to differ by generation.<sup>1</sup> For example, millennials seem to seek out lower priced wines, while Generation X privilege superior quality wines and prestigious brands (Wolf *et al.*, 2018). According to Wolf *et al.* (2018), baby boomers are driven by product quality and health benefits. In general, millennial consumers are more attracted by innovative packaging, low prices, and high alcohol content. Further, baby boomers see wine as being relaxing, natural, and healthy, whereas millennial consumers consider wine to be sensual, cool, relaxing, and sophisticated (Barber *et al.*, 2008; Olsen *et al.*, 2007; Thach and Olsen, 2015).

Regarding gender segments, in general men tend to rely on heuristics to simplify the decision process, especially in the case of wine. On the other hand, women tend to analyse decisions more than men, perceive the risk associated with choosing a particular wine over another, and consequently search for more information because they are more sensitive to details (Atkin *et al.*, 2007; Bruwer *et al.*, 2011; Barber *et al.*, 2006; Bruwer and McCutcheon, 2017; Forbes, 2012; Thach, 2012). Mora *et al.* (2018) also found significant differences in emotional response by gender and age. For all the still wines tested, men and

<sup>1</sup> According to the Pew Research Center (2014), these are the baby boomer generation (born 1946-1964), Generation X (born 1965-1980), and millennials, born after 1981.

older adults reported higher scores on significant emotions than their counterparts.

Although the previous results show a diversity of still wine market segments, the literature related show that there is not a market segmentation study for fortified wine, particularly for the Port wine. Therefore, the present study looks at distinct market segments of a special wine, fortified wine, taking Port wine as a reference.

Distinctly from still wines, the consumption of fortified wine is usually linked to a specific occasion, and therefore high frequency and large quantity consumed are scarce. Yormirzoev (2016) investigated the factors influencing fortified wine

consumption in Russia and found that men have a higher propensity to consume fortified wine than women, due to its high alcohol content. Based on a focus group analysis, Silva and Rebelo (2019) highlighted promotion, product adaptation to the market and focus in innovation, as the three main areas to boost Port wine sales.

### 3. Survey Design and Descriptive Statistics

A questionnaire was defined to collect information about socio-demographics, drinking habits, purchasing behaviour, and self-assessed knowledge about Port wine, as shown in Table 1.

Table 1 - Variables used in the questionnaire, shortened terms, and categories.

<i>Original Variables</i>	<i>Shortened Term</i>	<i>Categories</i>
Do you have Port wine at home?	Home	Yes No
Place of purchase	Purchase	Retail stores Speciality stores No type of outlet in particular
Factors influencing purchasing decision	Price Quality Design Prestige	Price Quality Design (label/bottle) Prestige
Mode of consumption	Mode	Alone With partner and/or family Friends and/or colleagues No occasion in particular
Consumption occasion	Occasion	Between meals During meals No time in particular
Frequency of consumption	Consumption	Occasional consumption: once a year Infrequent consumption: at least twice a year Frequent consumption: at least once per month Very frequent consumption: several times a month
Price willing to pay per bottle	WTP	Less than €10 €10–€20 €20–€50 €50–€100 More than 100€
Oenological knowledge	Knowledge	No knowledge Poor Moderate Considerable Very considerable
Type of Port wine typically consumed	Category	Standard Special No type in particular

The survey was digitally applied between January and September 2016 to obtain a random sample and to reach as many consumers as possible with different socio-economic characteristics such as age, gender, socio-professional field and living place. Specifically the questionnaire has been put online within the framework of a website whose address was subsequently disseminated within different networks (both institutional and private), using a snowball effect perspective. Thus, a random sample was gathered, with 678 Portuguese respondents aged 18-86, with a mean age of 47 (61% men), who came from every Portuguese regions, North (62%), Centre (26%), South (2,5%), and Madeira or the Azores (9%). The majority (83.4%) of the respondents are employed, 8.5% are retired, 3.4% are unemployed, and 4.8% are students.<sup>2</sup>

Concerning purchasing and consumption habits, almost all respondents (97%) said that they have Port wine at home. The purchase place was not specified by 50%, whereas 33% prefer to shop in retail stores and 17% in specialty stores. The main choice criterion is the perceived quality of Port wine (70%), followed by price (40%). The vast majority (78%) is willing to pay between €10 and €50 for a bottle of wine and nearly 50% could be designated as infrequent consumers. In general, Port wine is consumed at dinnertime (89%) with friends and relatives (63%). The majority (80% of respondents) consume any type of Port wine, and only 4.4% stated that they consumed special categories.

## 4. Methods and Results

### 4.1. Bivariate Statistical Analysis

As mentioned in the literature review, the gender and age of consumers are commonly used for clustering in the wine market. Subsequently, a chi-square test of independence was applied to evaluate whether the behaviour of

purchasing and consumption of Port wine is associated with gender or age. Results are summarized in Table 2.

Table 2. Chi-square test of independence.

Variables (shortened term)	Independent Variables	
	Gender p values	Age p values
Purchase	0.821	<0.001***
Design	0.407	<0.005**
WTP	0.748	<0.001***
Mode	0.007**	n.s.
Consumption	<0.001***	0.459
Knowledge	<0.001***	<0.001***
Category	0.239	0.006**

Notes: \* significant relationships  $p \leq 0.05$ ; \*\* significant relationships  $p \leq 0.01$ ; \*\*\* significant relationships  $p \leq 0.001$ .

Results indicate significant associations between age and the following covariates: place of purchase, design of label/bottle, price willing to pay per bottle, oenological knowledge, and type of Port typically consumed. With regard to gender, significant associations were found for occasion of consumption, frequency of consumption, and oenological knowledge.

In line with other studies (Bruwer *et al.*, 2002; Cohen *et al.*, 2009; Duarte *et al.*, 2010; Nunes *et al.*, 2016; Silva *et al.*, 2014), age showed itself to be a determining factor of consumer motivation and attitudes. In the present study, it may provide a useful variable for clustering the Port wine market.

### 4.2. Segmenting the Port wine market

Multivariate techniques, such as multiple correspondence analysis and cluster analysis, were used to identify consumer segments based on consumers' behaviour towards Port wine. These techniques take into account the existence of

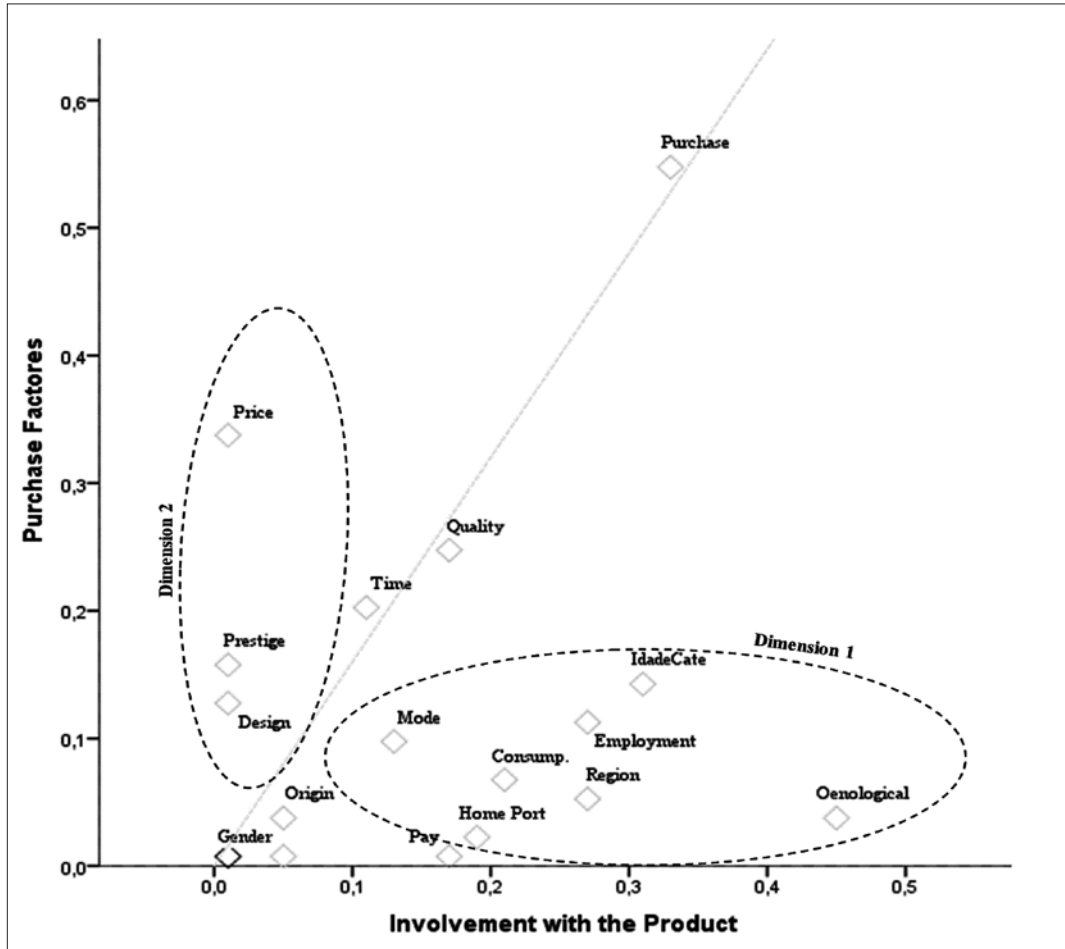
<sup>2</sup> Comparing our sample with the national population demographics, there is only a slight difference between the proportion of men (61%, against 47%) and a slight over-representation of residents in the North (62%, against 35%). Given that men are the largest consumers of wine (in quantitative terms) and that Port wine is produced in the North, it may have led to these groups being more willing to complete the survey. The age structure of our sample (according to the ranges presented in Table 4) is similar to that of the Portuguese population aged from 18-86.

multiple factors that are relevant for the analysis of behaviour and the qualitative nature of the majority of the independent variables gathered in the survey (Carvalho, 2008: 25).

A multiple correspondence analysis (MCA)<sup>3</sup> was applied to detect the relationships between socio-demographics and behavioural covariates (i.e., to identify the space of the consum-

er's social position). Seventeen dimensions were initially specified, but the Cronbach alpha results and associated eigenvalues suggested two dimensions (explaining 30% of the total variance) should be retained.<sup>4</sup> Using only the variables that distinguish these two dimensions most clearly, Figure 1 depicts these dimensions along two axes.

Figure 1 - Discrimination traits for the space of purchase and consumption.



<sup>3</sup> As a data reduction technique, MCA transforms the number of original variables into a smaller set of variables, the uncorrelated dimensions, which retain as much as possible of the information from the original variables. Simultaneously, the MCA transforms the categories of variables into numerical values through optimal scaling levels, maintaining the order and/or the distance of the original variables (Carvalho, 2008: 30). The dimensions have metric properties of quantitative variables that enable the use of a cluster analysis, forming homogeneous segments or groups that share common characteristics.

<sup>4</sup> The values of the Cronbach alphas for two dimensions are 0.708 and 0.585, respectively, indicating a satisfactory consistency in the two dimensions (Marôco, 2014: 459).



The first dimension represents the association between the following categories: age, region, type of Port wine consumed, the presence of Port wine at home, oenological knowledge, and the price the consumer is willing to pay per bottle. The second dimension summarizes the association between the categories that explains the motives/attitudes underpinning the purchase of Port wine (price, design, and prestige). One can thus designate Dimension 1 as 'involvement with the product' and Dimension 2 as 'purchase-related factors'.

Based on the scores (individual) in the two dimensions identified via MCA, a cluster analysis (k-means method) was performed, the results of which are presented in Table 3.

Cluster 1, which includes 41% of the respondents, presents positive values and a small difference between the two dimensions. Cluster 2, with 48% of the respondents, displays negative values and a higher value for purchase-related factors. Cluster 3, with 12% of the respondents,

Table 3 - Cluster centre identification.

<i>Dimension</i>	<i>Cluster 1</i>	<i>Cluster 2</i>	<i>Cluster 3</i>
Involvement with the product	0.63	-0.03	-1.99
Purchase-related factors	0.68	-0.84	0.91
% of respondents	40.7	47.5	11.8

presents higher values for involvement with the product.

A bivariate analysis, including cross-tabulation with chi-square statistics, was used to characterize each cluster in terms of its corresponding sociodemographic characteristics and consumer behaviour (Table 4).

Cluster 1 is overwhelmingly constituted of men (78%) over 45 years of age (62%), employed (92%), and resident in the north of Portugal (76%). All individuals of Cluster 1 affirmed that they habitually had Port wine at home and

Table 4 - Cluster profiling: sociodemographic characterization and purchase/consumption behaviour.

<i>Relative Frequency</i>	<i>Total Sample N=678</i>	<i>Cluster 1</i>	<i>Cluster 2</i>	<i>Cluster 3</i>	<i>p values</i>
<b>Gender</b>					
Female	39%	22%	52%	48%	<0.001***
Male	61%	78%	48%	52%	
<b>Age</b>					
18-24	7%	1%	1%	51%	<0.001***
25-34	14%	18%	8%	31%	
35-44	16%	19%	14%	8%	
≥ 45	63%	62%	77%	10%	
<b>Region of residence</b>					
North	62%	76%	61%	18%	<0.001***
Centre	26%	17%	25%	65%	
South	3%	2%	2%	5%	
Madeira or the Azores	9%	5%	12%	13%	
<b>Employment situation</b>					
Employed	83%	92%	86%	41%	<0.001***
Students	5%	0%	0%	39%	
Retired	9%	6%	13%	0%	
Unemployed	3%	2%	1%	20%	
<b>Presence of Port wine at home</b>					
Yes	97%	100%	99%	76%	<0.001***
No	3%	0%	1%	24%	
<b>Purchase-influencing factors<sup>1</sup></b>					
Design (label/bottle)	3%	12%	2%	24%	<0.001***



<i>Relative Frequency</i>	<i>Total Sample N=678</i>	<i>Cluster 1</i>	<i>Cluster 2</i>	<i>Cluster 3</i>	<i>p values</i>
Price	16%	49%	26%	64%	<0.001***
Quality	24%	83%	63%	56%	<0.001***
Prestige	57%	45%	20%	45%	<0.001***
<b>Place of purchase</b>					
Retail stores	46%	21%	38%	54%	<0.001***
Specialty stores	25%	25%	15%	1%	
No outlet in particular	29%	44%	26%	31%	
No answer		9%	21%	14%	
<b>Price willing to pay per bottle</b>					
Less than €10	14%	6%	16%	23%	<0.001***
€10-€20	45%	35%	56%	53%	
€20-€50	31%	45%	24%	21%	
€50-€100	8%	8%	4%	3%	
More than €100	2%	6%	1%	1%	
<b>Frequency of consumption</b>					
Occasional consumption	10%	2%	26%	20%	<0.001***
Infrequent consumption	31%	29%	62%	55%	
Frequent consumption	53%	54%	10%	20%	
Very frequent consumption	6%	16%	3%	5%	
<b>Occasion of consumption</b>					
Alone	20%	38%	7%	14%	<0.001***
With partner and/or family	64%	56%	71%	58%	
Friends and/or colleagues	15%	6%	20%	28%	
No occasion in particular	1%	0%	2%	0%	
<b>Type of Port wine</b>					
Standard	8%	2%	20%	45%	<0.001***
Special	47%	9%	2%	0%	
No type in particular	45%	89%	78%	55%	
<b>Oenological knowledge</b>					
No knowledge	6%	1%	8%	18%	<0.001***
Poor	30%	29%	34%	66%	
Moderate	45%	58%	57%	15%	
Considerable	13%	48%	1%	3%	
Very considerable	6%	21%	0%	0%	
<b>CLUSTER ATTRIBUTION</b>		<b>Experienced</b>	<b>Less experienced</b>	<b>Inexperienced</b>	

Notes:

<sup>1</sup> Refers to all answers of each cluster.

\* significant relationships  $p \leq 0.05$ ; \*\* significant relationships  $p \leq 0.01$ ; \*\*\* significant relationships  $p \leq 0.001$ .

considered quality as the factor that most influences their purchasing decisions. Concerning the buying and consumption habits of those in Cluster 1, it was confirmed that 44% were indifferent to where they purchased, while 25% preferred specialist stores. Members of the cluster were willing to pay €20-€50 per bottle and evaluat-

ed their consumption of Port wine as 'frequent'. The majority consumes with their partner and/or family, but there are still individuals who prefer to drink alone (38%). More than half of the individuals in Cluster 1 are not attached to the consumption of a specific type, but their knowledge of wine is good. Moreover, those preferring



special categories of Port wine are to be found almost entirely in Cluster 1. The same is true for the level of oenological knowledge, where Cluster 1 encompasses most of the consumers with high knowledge and who are willing to pay more for a bottle of Port wine.

Cluster 2 is mainly constituted (52%) of women above 45 years old. They live mostly in the north of Portugal and, as a rule, are employed. Similar to Cluster 1, consumers in Cluster 2 also stated that they habitually had Port wine available at home and that the quality factor determined purchasing choices. However, in contrast, purchasers in Cluster 2 opted to buy wine at retail stores, and were infrequent consumers willing to pay €10-€20 per bottle. Members of Cluster 2 clearly prefer to drink Port wine with their partner and/or friends, are largely indifferent to the type of Port wine they consume, and have a poor to moderate knowledge of wine. Comparing consumers from Clusters 1 and 2, the latter are willing to pay a lower price, and have a lower frequency of consumption and lower oenological knowledge.

Finally, Cluster 3 comprises mainly young people between 18 and 34 years of age, who work or study. As distinct from the other clusters, the consumers in Cluster 3 do not habitually have Port wine at home, and price rather than quality is the main factor in their buying decisions. They prefer to purchase in retail stores with a price per bottle of €10-€20 (i.e., the price they are willing to pay is lower). Their Port wine consumption is predominantly classified as infrequent and occurs essentially with their partner and/or family and/or friends. Regarding the type of wine consumed, the individuals in Cluster 3 opt for standard categories, in contrast with the other two clusters. The last cluster is characterized by individuals who have no or only poor oenological knowledge.

In summary, and comparing the clusters according to buying and consumption behaviour regarding Port wine, Cluster 1 is mainly made up of males with higher consumption of Port wine, who are willing to pay over €20 for a bottle of Port wine, and for whom quality is the determining factor when choosing a wine to purchase. These respondents possess a high level of oenological knowledge and prefer consuming alone, especially if the wine is from a special category. Cluster 2 is

very similar to Cluster 1, but males do not predominate, and purchases in retail stores are preferred at a price of up to €10. These individuals have weak oenological knowledge. Contrariwise, Cluster 3 is constituted by occasional or less-frequent consumers who choose to consume the standard category among friends and family. This segment is characterized by individuals with a low level of oenological knowledge, with weak involvement with the product, and for whom price acts as the determining factor in the purchase decision. In recognition of these distinct consumption patterns, the three clusters were named as follows: Cluster 1 – experienced consumers; Cluster 2 – less experienced consumers; and Cluster 3 – inexperienced consumers. These results are in line with Silva and Rebelo (2019), based on a focus group approach. Young consumers and our group of inexperienced consumers have a similar behaviour of purchasing and consuming Port wine.

Comparing our results with the main findings of other research on still wine market segmentation (Table 5) some common features arise (e.g. Thomas and Pickering, 2003; Duarte *et al.*, 2010; Di Vita *et al.*, 2014, Kelley *et al.*, 2015). All of these studies identified a group who drinks wine regularly and is driven by wine knowledge. A group of individuals designated as inexperienced drinkers was also found in the above-mentioned studies; this segment of consumers is characterized by younger individuals under 34 years old, who associate higher prices to higher quality. Finally, there is a group of less experienced consumers, mostly of women, who drink wine occasionally, with low wine knowledge.

## 5. Conclusion

The wine industry presents a typical market structure of monopolistic competition. From the demand side it is characterized by a huge diversity of consumers with specific cultural backgrounds, and different purchasing habits, behaviour, and preferences. Consequently, an efficient marketing strategy requires a proper market segmentation. Typically, the research carried out has been focused on still wine and not on other wine's typology, such as fortified wines, in which Port wine has a dominant position (Gouveia and Macedo,

Table 5 - Port wine segmentation and evidences on still wine.

Main common features	Previous still wine market segmentation				Port wine market segmentation
	<i>Thomas and Pickering (2003, New Zealand)</i>	<i>Duarte et al. (2010, Portugal)</i>	<i>Di Vita et al. (2014, Italy)</i>	<i>Kelley et al. (2015, US)</i>	<i>present study</i>
<ul style="list-style-type: none"> <li>• Highly knowledgeable</li> <li>• Regular consumers</li> <li>• Willing to pay more per a wine bottle</li> <li>• Mostly men</li> <li>• Consumers older</li> </ul>	Heavy wine purchase	Enthusiast wine drinkers	High quality demanding purchases	Super core drink	Experienced consumers
<ul style="list-style-type: none"> <li>• Moderate knowledgeable</li> <li>• Infrequent consumers</li> <li>• Consumers concerned with the social aspects of wine drinking</li> <li>• Mainly women</li> </ul>	Medium wine purchase	Infrequent wine drinkers	Occasional consumers	Core drink	Less experienced consumers
<ul style="list-style-type: none"> <li>• Poor or no knowledgeable</li> <li>• Occasional consumers</li> <li>• Consume at social occasions</li> <li>• The choice is dependent price</li> <li>• Young consumers</li> </ul>	Light wine purchase	Convivial wine drinkers	Basic consumers	Marginal drink	Inexperienced consumers

2018). Moreover, the literature review shows that the market segmentation is heterogeneous, according to the variables considered in the survey and the profile of the respondents.

This paper contributes to a better knowledge of wine consumers' behaviour, taking as target the Port wine Portuguese consumers. To achieve this goal and supported in the literature review, a random sample online survey was implemented and focused on issues related to socio-economic profile, oenological knowledge, purchasing and consumption taking decision. Applying multivariate statistical techniques, three distinct profiles of Portuguese Port consumers were identified: (1) Experienced Consumers, (2) Less Experienced Consumers, and (3) the Inexperienced Consumers. The market segmentation reveals that Port consumers are grouped according to their in-

volvement with the product, the occasion when consumption takes place and the price that they are willing to pay. Age and gender are the most distinctive socio-economic covariates. The Experienced Group consumes Port wine very frequently and comprises mostly men with a high degree of involvement with the product. By contrast, the Inexperienced Group consists largely of young, price-driven consumers who drink standard categories of Port with friends. The Less Experienced Group includes mostly women, occasional consumers with little or no knowledge of wine, who drink Port on special occasions, accompanied by their partner and/or family members.

From an academic perspective, this paper contributes to improve knowledge on segmenting wine market. Distinctly from the majority of wine segmentation studies research, which

applied clustering techniques according to behavioural and sociodemographic variables, we applied multivariate statistical techniques, matching multiple correspondence analysis with a cluster analysis. As managerial implications, it also provides useful results for the design and development of strategic plans in the wine industry, both at the collective, institutional, and business level. Specifically, for Port wine, the results point out to the development of a market viewpoint that would be able to identify detailed information on the profile, habits and attitudes of consumers. Through the dissemination of this information by wineries, they may adapt their marketing mix elements on specific market segments, including: i) the product; ii) the collective promotion or advertising (under the Port wine umbrella) and individual (firm brands); iii) and the distribution channels. For example, the results show that if the aim is to sell higher priced wines, firms should focus on the most knowledgeable and older consumers, while if the aim is to sell more, the target segment should be the young people, offering them a fashionable drink when compared with other alcoholic beverages, such as whisky, gin or vodka.

Additionally, the market for Port wine has an opportunity to grow, by promoting the product involvement of the Less Experienced Consumers, though, for example, actions that enhance their interest and oenological knowledge, which in turn would increase both the frequency of Port wine consumption and their willingness to pay higher prices per bottle. Given the growing number of female oenologists, wine critics, and vineyard entrepreneurs, it would be valuable to conduct research into Portuguese women's perceptions with a view to developing marketing strategies to counteract what appears to be their relative indifference to the distinctive 'identities' of different wines.

As usual, this work has also limitations, namely linked to the sample selection and data collection. The sample is random, but only covers the Portuguese consumers. So, in order to solve this drawback, the survey should be extended and applied to other markets and to non-Port wine-consumers, both national and foreign, driving a better understanding of the present and potential market. Thus, future research should overcome these drawbacks

and should be interesting to apply approaches, such as focus-group, discrete choice experiments or even preferences revealed in a real context.

### Acknowledgments

This work is financed by the project NORTE-01-0145-FEDER-000038 (INNOVINE & WINE – Innovation Platform of Vine & Wine, Portugal) and by European and Structural and Investment Funds in the FEDER, and supported through the Operational Competitiveness and Internationalization Program, Portugal (COMPETE 2020) [Project No. 006971 UIC/SOC/04011]; and by national funds, through the FCT – Portuguese Foundation for Science and Technology under the projects UIDB/04011/2020, UID/ECO/03182/2019, UIDB/04621/2020 and UIDP/04621/2020.

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