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Wine Industry: An Empirical Research on Consumers' Knowledge and Behaviour regarding Portuguese Wine

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*“Good Company, Good Wine, Good Welcome
Can Make Good People.”*

William Shakespeare, *Henry VIII*, act
1, sc.4, l.6-7.

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Abstract

The aim of this research is to understand consumers' perception and knowledge of Portuguese wine in relation with upcoming trends in the wine industry. This industry represents an economic trampoline for Portugal, as it is an increasingly attractive market that is now undergoing changes, as is the hospitality industry as a whole. A survey sample of data has been examined for this research, in order to understand consumer behavior and perception regarding Portuguese wine. Disinformation and lack of knowledge on this topic, in foreign countries, gives space to new trends, such as wine tourism, an effective marketing tool.

Key Words: Wine industry, Portuguese wine, Consumer behavior, Wine tourism

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I. Introduction

Vines are among the oldest plants on earth. Their existence dates back long before mankind. Wine, in parallel, has always been a beverage consumed by different cultures through different eras. Historians report the appearance of wine before 6000 B.C. in Mesopotamia, whilst in the Iliad, notable epic poem by Homer, dating back to the seventh century B.C., wine was acclaimed as the “nectar of gods” (Homer VII B.C.) . Wine has always been present in the daily life of man. Looking closer to the present, and more precisely during World War I, wine was a primary good for soldiers in the front line and a tool for officials to keep the army compact. In a war of exhaustion, where food and energies were scarce, wine was however a fundamental element of soldiers' everyday living (Callegari 2018). It is, therefore, necessary to ask how this beverage became so important in the life of a human being as to be defined as a divine beverage or how it could not be lived without even in extreme situations such as war.

During the Great Depression, in 1938, a group of researchers started one of the longest studies of all time: the Harvard Study of Adult Development. The research involved tracking the wellbeing and health of 824 men for over 75 years. Robert Waldinger, who is currently directing the still ongoing research, stated, during one of the most viewed Ted talks of all time: “[...] people who are more socially connected, to family, to friends, to community, are happier, they’re physically healthier and they live longer...”. (Liz Mineo 2017). Therefore humans, especially nowadays, are constantly looking for activities that help build relationships. Socialization is what motivates people to participate at events and social activities are what influence the whole experience at the event. (Anders Nordvall, Robert Pattersson, Bo Svensson, Steve Brown 2014).

There are several different activities that act as a “social glue” and help create and tighten bonds amongst people. This topic has been further developed by new research carried out by the University of Oxford (Robin Dunbar 2017), that demonstrated eating and drinking together not only increase socializing, but also increase the levels of happiness and satisfaction that individuals achieve. Focusing on drinking behavior, the act of drinking wine is often seen as a moment of “sharing” where an individual acquires a sense of belonging to a group. Wine is therefore a product that embodies a deep social meaning (Unwin 1996).

Having ascertained the importance of wine both in the life of a single individual as well as in society, it becomes easier to understand how drinking wine goes further than the mere act, and has developed into a strong wine culture. As a matter of fact, there has also been a process of specialization in wine production as well as in consumption. On one hand, more precise cultivation techniques have been developed, as well as more accurate fermentation and aging processes (Querol 2013); on the other hand, an increasingly meticulous study has been developed to capture every single aroma and every single facet of wine. Parallel to this progressive specialization, countries such as Italy, France, Spain, and Portugal have made the wine sector a leading sector of their economy (World Population Review 2021) and consequently, as will be further explained later on, consumers have developed a strong attention for the origin of the wine they are buying.

The aim of this research is to verify consumers' knowledge and perception of Portuguese wine. For this purpose, a survey was carried out allowing the identification of a series of independent variables (e.g., origin, price, label), which explain the perception of Portuguese wine by the consumer. Finally, possible future outlooks will be analyzed on the basis of the obtained results, in order to increase knowledge of wine at an international level.

II. Wine Industry

2.1 A Strategic Perspective on Wine Industry

The following section will evaluate the macro environment and competitive context of the wine industry through the application of strategic frameworks. A PESTEL analysis was carried out to gain deeper understanding of the wine industry and its increasing attractiveness, thus allowing to place into better perspective the chapter that follows on consumer behavior and decision making.

2.1.1 Political & Legal factors

How governments decide to treat wine, in regards to both production and consumption, can vary greatly (Steve Charters 2006). For example, the European Union (EU) has put in place an internal tariff-free policy, that helps promote wine trade amongst EU member states. The entity within the EU that lays down both regulatory and expenditure measures concerning the wine market is the Common Market Organization (“CMO”). The most important reform implemented by the CMO is Reg.1308/2013 which established a common organization of the markets in regards to all agricultural products. Other more recent reforms include; the procedure to apply for protection of designations of origins (Reg.2019/33) with high consideration of individual producers; national support programs, with the same level of contribution available to all Member States and a preference for operations that comprehend more Member States and designated regions of origin, thus encouraging the development of synergies (Reg.2016/1149) (European Commission 2021).

2.1.2 Economic Factors

The EU is the leading producer of wine worldwide. In the years between 2014 and 2018 the total average annual production reached 167 million hectoliters. Overall, the EU wine industry

accounts for 70% of wine exports, 65% of production, 60% of consumption globally and 45% of geographic viticulture. The most recent wine reform formulated by the CMO has three main objectives: (i) to increase competitiveness of EU wine producers; (ii) to achieve better balance of demand and supply; and (iii) to preserve and boost viticulture in rural areas (European Union 2021).

The European economic sphere has greatly evolved during the course of and following Brexit. As a matter of fact, the UK market, in 2019, imported a total of €1.8 billion worth of wine from Europe. The increasing tariffs caused by the separation of the UK from the EU is and will have a detrimental effect on the Wine Industry (Farm Europe 2021).

2.1.3 Social Factors

Wine consumption is highly influenced by the social environment in which individuals grow (Castriota, 2020). Although the EU is seen as a whole from an economic perspective, especially when it comes to the implementation of regulations and laws, from another perspective, social and cultural aspects vary greatly from country to country. Consumer research demonstrates that the social and cultural background of consumers has a direct impact on what and why they consume. For example, an Italian consumer is more likely to drink wine than one in Iceland, also due to the fact that Italy is a wine producer whereas the climate in Iceland does not favor viticulture. Cultural environment is also relevant, for example some religions prohibit the consumption of wine and alcohol in general. Lastly, in some countries, people are dissuaded from drinking wine; i.e. in Sweden, very high taxes are imposed on alcoholic beverages and their distribution is limited to monopoly outlets to discourage people to consume (Charters, 2006).

From the point of view of production, the wine sector often is a source of value on a micro level. This results as the only way to maintain small communities where there is no other economic alternative as previously mentioned in the CMO's objectives. (Comité Européen des Entreprises Vins 2021).

2.1.4 Technological Factors

The influence of technological factors on the wine industry can, once again, be seen as a double-sided coin. On one side the last decade has seen a huge development of oenological technology, whereas on the other customers are overwhelmed by innumerable distribution and information channels. An example of the former is the implementation of machine learning in agriculture. Thanks to this, wine producers can take a picture of the vine leaves and predict in an accurate way if the plant is stressed (Lareine, 2021). Whereas from the customers' perspective, research shows that during the pandemic digital channels have spiked even more, and the majority of categories have seen a growth of over 10% on their online customer base, customers who plan to continue online shopping even once brick-and-mortar shops open again (McKinsey & Company 2020). Another growing tool is the availability of wine apps, e.g. Vivino, which allow customers to quickly scan the label of a bottle and have immediate feedback on the average price, the taste and other useful information.

2.1.5 Environmental Factors

Over one fifth of greenhouse gas (GHG) emissions worldwide derive from agriculture, although farming practices are gradually changing to limit the impact on climate change (McKinsey Quarterly 2020). By the end of the 20th century, people have become increasingly concerned regarding the risks caused by agricultural chemicals, to both public health and the environment. This has led to increased awareness on sustainability and has helped organic food

gain popularity. During the last decade, organic wine has also registered an increasing success, becoming a strong symbol of authenticity (Geoffrey Jones, Emily Grandjean 2018).

To guarantee the development of sustainable farming, the EU Common Agricultural Policy and the EU wine policy are undergoing reform processes (Pomarici, Sardone, 2020). The EU's evaluation strongly focuses on how to preserve biodiversity, reduce pesticide use and ensure environmental sustainability (European Commission 2020).

2.2 Consumer Behavior and Decision Making in the Wine Industry

Consumer behavior is defined by Walters as: "...the process whereby individuals decide whether, what, when, where, how, and from whom to purchase goods and services." (Walters, 1974). As consumer behavior is quite a new field of study, its concepts are borrowed and developed from the study of various other disciplines such as sociology, psychology and anthropology (Schiffman, Kanuk, 1997). Based on these concepts, the following chapter will help us identify the process consumers undergo when choosing and buying a bottle of wine.

The consumer decision making process can be divided into five different phases: initially consumers identify their needs, secondly, they gather information, later they evaluate alternatives to then make their buying decision and finally consumers go through a post purchase decision evaluation which translates into "loyalty" or "non-return". Consumers' behavior is also determined by psychological and economic factors, as well as the influence of environmental factors such as cultural and social values. (Court, Elzinga, Mulder, and Vetvik, 2009).

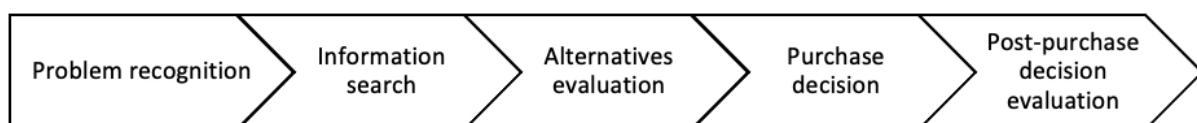
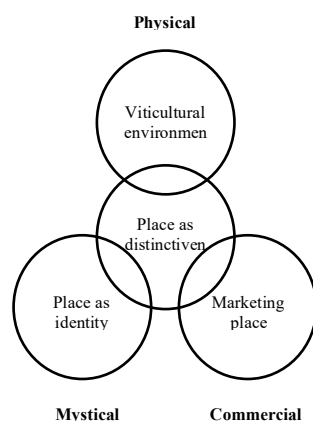


Figure 1: Consumer Decision Making Process

How does this apply to the wine industry and what criteria do consumers use when purchasing a bottle of wine? Four main factors are considered by the consumer when buying a bottle of wine, which are: price, country of origin, degree of knowledge, and to a certain extent denomination of origin. The price of wine is the most influential factor when buying a bottle in a department store. 55% of consumers choose wines of less than 3.5 euros for everyday consumption but spend more than 6 euros for the wine they buy for a celebration. (Sans, 2015). Now that we have established that the dominant criteria when choosing wine is price, for the purpose of this research we will compare wines within the same price segment to evaluate the importance of the other factors and in particular the “country of origin”.

2.2.1 Terroir

Although the word “terroir” comes from *terre*, which in French means soil or territory, its meaning differs greatly. Terroir can be defined as the combination of three components: climate, topography and soil (Johnson, Halliday, 1992). Climate refers to all atmospheric conditions that surround the vineyard, i.e. rainfall, wind, sunlight and temperature. Topography indicates the physical features of an area, this includes both natural and artificial features, i.e. the slope of the vineyard or rivers and mountain ranges. Finally, soil defines the nutrients and water available; for example the Douro Valley is characterized by a soil made up of schist, a rock which is rich in nutrients (Taylor's s.d.).



From a strategic and marketing perspective, terroir can be seen as a point of differentiation. Especially in a fragmented market, terroir is a means to promote wine. It allows producers to place their product as “different” and “invaluable” by virtue of the *origin*. Overall, the concept of terroir can be seen as a unifying factor

Figure 1: The interlocking concepts of terroir between the physical, therefore the environment, the

mystical, which refers to a sense of place, and lastly its marketing role. A better interpretation of the interlocking concepts of terroir can be seen graphically in *Figure 2* (Charters, 2006).

It is undeniable that terroir is a tool that brings added value when it comes to wine. However, how do people from different countries perceive a wine bottle’s origin? Two surveys conducted by Statista show how the country of origin, when choosing a bottle of wine, is perceived differently depending on the nationality of the sample. Indeed, as shown in the graphs below, whilst 52% of French citizens value the origin factor as one of the most important (Statista 2021), only 19% of UK citizens are influenced by the origin factor when purchasing a bottle of wine (Statista 2019).

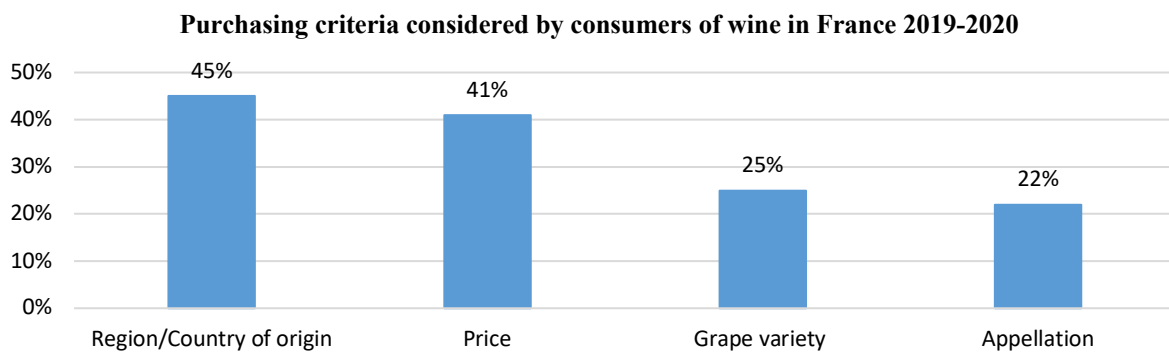


Figure 3: The purchasing criteria considered by consumers of wine in France 2019-2020

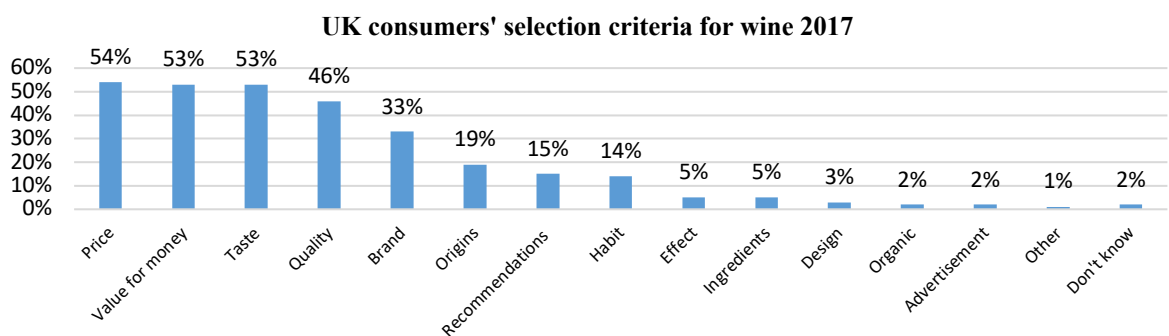


Figure 4: UK consumers' selection criteria for wine 2017

Although, to an extent, the reason why consumers’ wine choice diverges in these two countries respectively can be attributed to cultural difference, another aspect that should be taken into account is that France is one of the top three wine producers worldwide (Statista 2021), whereas

the UK has a very low production. Further research demonstrates that the region of origin is the most valued extrinsic attribute when choosing which wine to buy also for Portuguese and Italian consumers. This is also especially true for occasional buyers that correlate provenance as an indicator of better quality (Nunes, Madureira, 2013). Overall, these studies show how consumers that come from countries with high volumes of viticulture (i.e. France, Italy, Spain, Portugal) are the ones who value the region of origin as one of the dominant factors when going through the wine choosing process.

2.2.2 Segmentation

Segmentation is defined as the process of splitting consumers into smaller groups with similar needs. The final aim of segmentation is for companies to better channel their products or services to those who are most likely interested in them. Segmentation is the process that precedes targeting, which is the final act of choosing the segment or segments to whom to offer the product or service (Blythe, 2009).

The four principle types of segmentation are: geographic, demographic and socio-economic, behavioral and psychographic. The first, geographic segmentation, is intuitive and refers to the division of the market based on geographical regions, i.e. research shows that whilst in the UK only 7% prefer sweet tasting wine, in the US the number increases to 47% (Johnson, Danner, Bastian, 2017). The second, demographic and socio-economic segmentation, is usually very easy to gather as it includes variables such as, gender, age, nationality, etc. The third, behavioral segmentation, refers to the how, what, why, where and when a consumer purchases considering psychological and cultural influences (Johnson, Danner, Bastian, 2017). Lastly, psychographic segmentation, can be defined as splitting the market based on consumers' personality, lifestyle, social class, and hobbies (Philip, Kevin, 2015).

In the wine industry market segmentation primarily focuses on demographics and psychographics (e.g., value added) and behavioral (e.g., the price the consumer is willing to pay). Segmenting wine consumers helps understand what it is that inspires them to drink wine.

The purchase of a product, in this case a bottle of wine, involves both tangible and intangible aspects. The former refer to the bottle shape, the label, the price, etc, whereas the latter refer to the smell, taste and grape type. The most significant research attempt to segment wine consumers was carried out by Spawton (1991) who defined four main kinds of wine drinkers (Charters, 2006):

<i>Connoisseurs</i>	Regular drinkers who are knowledgeable on both tangible and intangible wine aspects.
<i>Aspirational drinkers</i>	Willing to learn, social drinkers.
<i>Beverage wine consumers</i>	Focus on the drinking aspect, they have little appreciation for different wines and tastes.
<i>New wine drinkers</i>	Similar to aspirational drinkers, they yet have to establish their preferences.

The four customer segments highlighted above are also useful to identify possible pioneers for the development of the current trend, wine tourism, that will further be discussed later on in this study.

Research, indeed, hasn't yet defined a specific profile and fixed characteristics for a wine tourist. (Carlsen, Charters, 2006). For example, domestic travelers that come from a wine producing country tend to prefer wine-related holidays during the winter for shorter periods of time. Whereas, foreign visitors are usually attracted during the summer season, where they can mix a wine related holiday to other kinds of tourist activities (Alebaki, Iakovidou, 2011).

Shifting focus on demographics, evidence shows that older customers emphasise the actual product, whereas younger tourists value more the experience as a whole and complementary services they receive rather than the quality of the wine (Carlsen, Charters, 2006).

Overall, what characterizes a possible “wine-tourist” is the fact that he/she can be any of the four wine drinkers identified by Spawton. For example, whilst on one hand, the connoisseur wants to ascertain and deepen his knowledge on wine or discover the wine industry of a different market i.e. Portugal; on the other hand the aspirational drinker is looking forward to explore and learn more about an industry that intrigues him.

2.3 Trends and Innovations: Wine Tourism

During the last decades, the hospitality industry has adapted its focus to meet the needs of customers who do not solely want to visit new places, but have the desire to connect with people and build memories (Dalrymple, Mann, Peters , and Seitzman , 2020). A study by PWC also shows how customers who have a superior experience are more prone to try additional products or services offered by the same brand (Puthiyamadam, Reyes, 2018).

This constant need to look for experiences has enhanced the development of wine tourism which is now considered as a tool to grow back tourism after the advent of Covid-19.

Zurab Pololikashvili, Secretary-General of the United Nations World Tourism Organisation (UNWTO) stated during the fifth annual global wine tourism conference that: "Many people are travelling to discover wine routes... We are creating new trends and one of them, which we started five years ago, is wine tourism development," The 5th UNWTO Global Conference on Wine Tourism was held this September in Reguengos de Monsaraz, Alentejo. The event was organized by the World Tourism Organization in collaboration with Visit Portugal and the city of Reguengos de Monsaraz. The theme was: “Wine Tourism – a driver for rural

development” and the main focus of the conference was the possible development wine tourism could generate in remote rural destinations, both on a social and on an economic level. Experts in both tourism and the wine industry joined forces to find concrete and applicable solutions to build and increase tourism in a better more sustainable and inclusive way (UNWTO 2021).

In recent years, the growth of wine tourism, also known as enotourism, has sped up considerably, both in the New World and in traditional wine producing regions. The most well-known French chateaus have now opened their doors to visitors, as have the many modern wineries scattered all over the world.

The most common form of enotourism is wine tasting, however there are innumerable opportunities and synergies that can be entered into with neighboring industries. For example, to amplify the experience, wine tasting can be paired with a gastronomic experience giving the consumer a deeper appreciation of both the food and the wine. Other wine discovery journeys can be done with the addition of an activity such as a horseback ride through the vineyards. The possibility to have so many different synergies that surround wine experiences demonstrates that this new trend has huge potential for both the present and future.

Throughout history wine has often been associated with status and luxury and, although on one hand this has given this industry additional value, on the other consumers sometimes feel intimidated by this surrounding aura. Wine tourism is a means to educate consumers on the origin, the influence, and the terroir, whilst it is also an opportunity to simply drink a glass of wine and enjoy a breathtaking landscape. This form of tourism leads to a direct dialogue between the consumer and the producer and will allow the consumer to value more and more experiences.

Focusing now on a microeconomic level, it is easy to highlight that marketing is the real reason why wineries promote and offer “enoturistic” experiences. As mentioned previously in the study by McKinsey, people want to connect and build memories, and this is exactly what wine tourism creates: a story behind a brand that creates a positive link in the consumers’ mind and increases the likelihood of them remembering it in the future.

Although wine tourism as a trend is positive on a global level, it is still unclear how each Portuguese winery aims to bring this added value. An example worth reporting is that of the winery Quinta dos Vales, located in Lagoa (south of Portugal). As previously mentioned, the aim of Enotourism is that to create a bond between the consumer and the product and no stronger bond can be created than when the consumer considers the product his or her own. This is exactly what Quinta dos Vales is doing with the development of a new project called “The Winemaker Experience” where wine lovers become wine producers. The owner of Quinta dos Vales, Karl Heinz Stock, is the man behind this idea that came from his personal experience, and builds on how his passion for wine transformed him into a producer. In “The Winemaker Experience” each person owns a plot of the vineyard and is guided by a team of experts through the entire process. This allows participants to produce a wine based on their preferences. Each vineyard gives a production of approximately one barrel which is the equivalent of three hundred bottles of wine, the perfect amount to keep in-house. These private winemakers have a hands-on approach, as they see their vines grow and their grapes ripen, and lastly, they know why their wine tastes the way it does. The emotional bond created through this process is stronger than any other marketing tool and owners feel a sense of pride in something they have created from beginning to end. The project has already grown significantly in the past few years, with currently 19 private vine-owners who have switched from being wine-lovers to wine-makers (Quinta Dos Vales Wine Estate s.d.).

Quinta dos Vales has shown us one of the many paths wine tourism can take. In fact, one could say that Portugal is sitting on a gold mine, or perhaps a “wine-mine”, of opportunity. The peculiar combination of territory, landscape and weather are sure to attract many looking to experience wine tourism at its finest.

III. Methodology

3.1 Research Design

Research is a necessary means to enhance or to extend our knowledge of aspects we know little or nothing about. Overall, its objective is to better understand the world we live in. (Adams, Khan, Raeside, White, 2007).

The purpose of this research is to investigate how customer perception, knowledge and behavior surrounding Portuguese wine and how it will change with the development of wine tourism. To guide this empirical study, the following research questions have been structured based on the literature about consumer behavior and wine tourism analyzed in previous chapters:

- 1) How do socio-demographic and behavioral variables influence the consumers' willingness to buy Portuguese wine?
- 2) What insights do the same independent variables provide on the future of the Portuguese wine industry?

To evaluate the decision-making process consumers face whilst choosing wine, a survey strategy with a questionnaire has been developed and subsequently carried out. This strategy allows for the collection of quantitative data which can be analyzed using descriptive and inferential statistics. The data, collected by using a large survey sample, helped assess the relationship and dependencies amongst key variables (Saunders, Lewis, Thornhill, 1997). The cross-sectional survey questionnaire was sent openly to a random sample; thus, the research

was carried out based on primary data. Two or more variables from the collected data were then compared using a top-down approach in order to evaluate how different variables influence the perception and willingness to buy consumers have on Portuguese wine. Some survey questions were purely inserted for informative reasons and allowed to build personal suggestions and possible future innovative tools to implement in the Portuguese wine scenario. To prevent biased and incorrect answers, the survey was designed in a simple manner. For example, very technical words related to the wine industry (e.g. terroir) were avoided, thus making the survey accessible and comprehensible to everyone.

3.2 Data Collection

Although the research aims to measure the respondents' behavior and propension towards purchasing Portuguese wine, the survey can be divided into three main sections, not strictly related only to Portuguese wine. The first part refers to the segmentation of the sample, from which two sub-segments emerge. One focuses on a geographic division (where the respondents come from), whereas the second focuses on their knowledge (i.e connoisseurs and aspirational drinkers). The second section is centered on consumer behaviour and highlights how important a variety of criteria are for each consumer. Finally, the third section looks more in detail at how much respondents appreciate Portuguese wine. Whilst the first and second section retrieve the independent variables, the last section gives information to test the dependant variable, verifying its dependency on the independent ones.

Some of the questions were formulated as objective responses, most commonly known as multiple choice questions, whereas others consisted in ranking the answer options or assigning a score from one to ten on specific wine attributes. Nominal data, such as wine country preference ranking, required to be transformed in order to perform regression analysis. Weights were applied in reverse, where the most preferred choice (ranked as #1 in the survey) was given

the largest weight, whereas the least preferred choice (which in the survey was ranked last) was given a weight of 1.

3.3 Sampling

Collecting data from the entire population is often impractical due to budget and time constraints (Saunders, Lewis, Thornhill, 2016). In this case, the target population considered to be relevant is everyone legally entitled to buy wine. As a sampling method, random sampling was chosen in order to collect a good amount of data to then analyze. Although the respondents come from a variety of different countries, it is possible to state that, currently, they all reside in Europe, and the majority in countries that belong to the European Union. This will therefore allow for the extrapolating of useful future insights along with the PESTEL analysis previously outlined.

The questionnaire was then sent out to friends, family, co-workers, and many of them then forwarded it on to extend the network as much as possible and make it statistically representative. Moreover, the survey was posted on social media accounts such as LinkedIn, Instagram and Twitter. Major difficulties were encountered to reach out to the 60+ age group as they are less accustomed to online surveys and often have a language barrier. To ensure that the analysis reflects the behavior of the entire population, the sample size must be big enough to be considered normalized. For this reason, with a 95% confidence interval chosen, a number of at least 146 respondents had to be obtained (Das, 2016). For the purpose of the analysis, a sample size of 200 persons has been collected.

3.4 Data Analysis

The final number used for the analysis presented below is 200 respondents excluding all possible outliers and those who did not fully complete the survey. For the purpose of the

regression, in fact, the respondent number of all variables taken into account have to coincide. The use of descriptive statistics was used to describe the features of the data below.

The sample is segmented into four age groups: 44% were between 18-27 years old, 18% were between 28-40 years old, 19% were between 41-59 years old and 20% were 60+ years old. The majority of respondents were Italian (69.5%), 8,5% were Portuguese, 7.5% were French, 5.5% were Brazilian, 2.5% were British and the remaining 6% are not specified.

3.5 Regression Model

The purpose of the research, as previously mentioned, is the motivation behind consumers to buy Portuguese wine rather than wine originating from any other country. In order to fulfill the study, the dependent variable was set as “willingness to buy Portuguese wine”. In the questionnaire, respondents were given a scale from one to ten to answer this question.

The data analysis proceeds with the identification of the independent variables that explain the dependent one. The goal is to obtain a high R squared, also known as coefficient of determination, which indicates how well the dependent variable is explained by the independent ones (Cameron, 1997). To obtain an R square which explains in the best possible manner the "willingness to buy Portuguese wine", it is necessary to consider as many independent variables as possible. However, testing more independent variables simultaneously, that although taken individually are significant (with a p-value lower than 5%), can lead to a loss of significance of the variables themselves. This issue, known as multicollinearity (Farrar and Glauber, 1967), which is further explained in the Limitations section below, has resulted in the adoption of a stepwise approach to the development of the model (Johnsson 1992). This method consists in introducing one variable at a time to those

already included in the model in such way to verify that it is meaningful and that those already present do not lose their significance.

For the purposes of this research, the following independent variables were included in the model:

- › **Knowledge:** indicates when respondents consider themselves knowledgeable about wine culture. A scale of zero to ten was included in the questionnaire as a response.
- › **Age:** the sample contains people aged 18 to 78. This variable is the only one in the model that has a p-value greater than 5% (around 5.2%) but was nevertheless considered significant in explaining the dependent variable (Filho, 2013).
- › **Portuguese Wine Perception:** here participants were asked to rank wine with different provenance. A score from one to six was then attributed accordingly to the position entered where the first position represents the highest quality wine and the sixth the worst one. In this way it was possible to insert the variable *PW perception* in the model.
- › **Portuguese Visitor:** indicates whether the participants have been to Portugal. To fit this variable to the model, "yes" was given a value of 1 while "no" was given a value of 0.
- › **Interest in a Wine Experience:** indicates respondents' interest in participating in a wine experience in the Portuguese territory (e.g., wine tasting, visit a winery etc.). This variable, like "knowledge", was also developed on a scale of one to ten.

3.5.1 The Model

Through the application of the stepwise method, the following model was obtained:

$$Y_{willingness} = a + b * X_{knowledge} + c * X_{age} + d * X_{PW} + e * X_{PV} + f * X_{interest} + \epsilon_i^1$$

From the regression the following results emerged:

¹ a = intercept, ϵ_i = error

Regression Statistics		ANOVA				
Multiple R	0,716543					
R Square	0,513433	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Adjusted R Square	0,500893	Regression	5	761,0084083	152,2016817	40,94242265
Standard Error	1,928071	Residual	194	721,1865917	3,717456658	1,22934E-28
Observations	200	Total	199	1482,195		

Figure 5: R squared and its Significance

MODEL RESULTS						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	4,234890273	0,674261068	6,280787181	2,16541E-09	2,90506706	5,564713486
knowledge	0,250376356	0,064919272	3,85673387	0,000156273	0,122338183	0,378414529
Age	-0,015255376	0,007746302	-1,969375286	0,050333591	-0,030533156	2,24042E-05
PW Perception	-0,526385769	0,117250441	-4,48941396	1,22352E-05	-0,757635008	-0,29513653
Been in Portugal	1,640496461	0,313382166	5,234811156	4,27176E-07	1,022422989	2,258569933
Interest in Wine Exp	2,413846705	0,375168673	6,43403055	9,48829E-10	1,673913712	3,153779699

Figure 6: Coefficient results

The R squared indicates that the variable "willingness to buy Portuguese Wine" is explained approximately 52% by the independent variables described above. As the analyzed variable is behavioral, it is explained by a multitude of independent variables. Therefore, for such a model to be sufficiently predictive, it is necessary to obtain an R-square of at least 40% (Rose 2018). The coefficient of determination is also significant because the p-value relative to the F test is well below 5%.

3.5.2 Model Interpretation

Based on the coefficients obtained in Figure X, the dependent variable, which has a scale of values from one to ten, has a value equal to that of the intercept and therefore approximately 4.23 assuming all independent variables equal to 0. This value must then be added to the independent variables multiplied by their own coefficient. This means that, for example, for each point assigned to the answer relative to knowledge ($X_{knowledge}$) on a scale from one to ten, the willingness to buy Portuguese Wine ($Y_{willingness}$) will increase by 0.25. Furthermore, it is necessary to explain that the variable Portuguese Wine Perception (X_{PW}), as explained above, represents Portuguese wine in a ranking from one to six where one represents the best quality wine and six the worst and for this reason, the coefficient has a negative value. This

implies that the lower the value of the Portuguese Wine Perception variable is, the higher will be the dependent variable of the respondents.

3.5 Limitations

3.5.1 Theoretical limitations

Due to the limited scope of the study, the variable denominated *interest*, which refers to the possible interest in a wine experience wasn't further expanded. As previously highlighted in the previous paragraph *Wine Tourism*, there are different wine tourism experiences which could alter the interest in the respondent based on his/her preferences.

Furthermore, some survey questions were purely inserted for informative reasons and allowed to build personal suggestions and a possible future innovation tools to implement in the Portuguese wine scenario. An example is the overall positive interest encountered in the survey on the topic of organic wine. This trend, which is indeed growing as reflected in the survey, will be discussed as a possible future outlook later on in this research.

3.5.2 Methodical Limitations

A first limitation is the *respondent selection issue* which derives from the utilization of surveys to collect data. This is caused by respondents that provide incorrect answers either intentionally or unintentionally. For example, some respondents have a different consideration of the rating scale from one to ten. One respondent might consider a rating of five to be an average score whereas another could consider a five to be below average. Another example could be the occurrence of incorrect or approximate answers due to the desire of the respondent to go through the survey as quickly as possible.

Another limitation is given by the fact that 69,5% of respondents are Italian, this is caused by the network of family and friends. However, as Italy is the major wine producer worldwide - in 2020 it produced 49.1 million hectoliters of wine (Statista 2021) - and also features an extremely strong wine culture, this can also provide some additional insights for the research about how Portuguese wine is perceived abroad.

Lastly, it was necessary to apply the stepwise method in order to avoid possible problems of multicollinearity. This problem consists in a high correlation between the dependent variables, so that they influence each other, leading to a loss of significance if they are considered simultaneously. This has not allowed to include in the regression model all the variables obtained leading to a reduction of the R square (Farrar and Glauber, 1967). An example are the two variables obtained through the questions "*Have you ever lived in Portugal (more than 6 months)?*" and "*Have you ever been to Portugal?*". In this case the answers are highly correlated and, although both were significant in the prediction of the dependent variable, they lost their significance when taken simultaneously. Therefore, only the responses from the question "Have you ever been to Portugal?" were considered as they were less biased towards the variable "Willingness to Buy Portuguese Wine".

IV. Future Outlook: Organic Wine

Ultimately, the survey concluded with the question: "Would you be interested in organic wine?". Although this question was not integrated in the model, as it generates a multicollinearity issue with the dependent variable "willingness to buy Portuguese wine", it is most certainly relevant to gain primary data on how this new trend is effectively perceived by respondents. The feedback collected was positive as a total of 144 respondents, which accounts for 72% of the sample, replied that they would be interested in organic wine.

Moreover, research shows that, compared to conventional wine, consumers perceive organic wine as a higher quality product (Ulrich Hamm, Isabel Schäufole , 2017). There are two main factors that have contributed to the increased attention organic wine is receiving. Firstly, consumers are motivated to safeguard the environment and acknowledge the fact that the reduction of chemicals has a positive effect on the vineyards. Secondly, consumers trust that not using synthetic pesticides contributes to better health (Fabio Boncinelli, Andrea Dominici, Francesca Gerini, Enrico Marone , 2021).

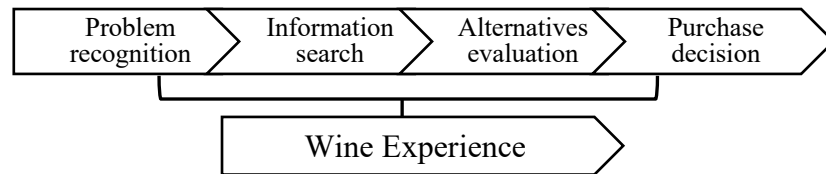
The fact that organic wine is perceived as a product with additional value by consumers has given it space to penetrate the luxury industry. An example of such can be seen in the 100% natural wine list presented at Noma in Copenhagen, which was named four times the best restaurant in the world (Guy Woodward, 2020).

The value of organic wine market in 2019 amounted to a total of US\$ 7,460.29 million; however, forecasts show that it will reach a total of US\$ 16,647.81 million by 2027, growing at a compounded annual growth rate (CAGR) of 10.7% (The Insight Partners, 2021), where the majority of market share is currently held by Europe. Wine producing countries, unknowingly, have the opportunity to unlock this market potential and Portugal, being one of them, can and should ride this wave.

V. Conclusion

This research aimed to answer a specific question: how is Portuguese wine perceived by consumers abroad? From the survey it is possible to conclude that people who are not Portuguese and have never lived in Portugal for a period longer than six months are prone to choosing wine that comes from different countries rather than Portugal; in particular, Italian and French wines are the highest ranked.

However, another useful aspect that emerged from the survey is the fact that most people are interested in participating in a wine experience in Portugal, and this does not appear to be



correlated with the knowledge that respondents have on the wine industry or with their interest in the wine industry, and this is actually very positive. People perceive wine tourism as a means to relax whilst at the same time learning something, or they view it as an additional reason to visit a country. This is exactly why wine tourism, in the long run, will work as an excellent marketing tool and will increase what was defined in this study as the ‘familiarity’ variable. Further research demonstrates that, especially when consumers find themselves at a restaurant, they seem to be less confident than when they are at a store. For this reason, they tend to choose based on what they have already tried in the past, or look for advice from other people at the table or from the waiter/sommelier. A positive wine experience in Portugal is likely to influence consumers to look for a Portuguese wine to pair with their dinner. Finally, the marketing funnel will be disrupted, resulting in a positive effect on customer perception. Below is a diagram of the steps a wine experience could replace in the marketing funnel:

Once the consumer identifies his ‘need’ - which in this case is the equivalent to buying a bottle of wine - he will skip the two following phases (*information search* and *alternatives evaluation*) and jump directly to the final *purchase decision* phase. The two middle steps will be replaced by the memory of a wine experience in Portugal that will function as a cultural accelerator and bring this sense of ‘knowledge’ to the consumer, that he will then retrieve in his country of origin. The post-purchase evaluation phase is also not contemplated in this version of the marketing process, as the customer will have had time to evaluate the product during the wine tourism experience. (Sigala, Robinson, 2019)

Needless to say, Portuguese wine is gaining more and more attention worldwide. Bloomberg writes: “The hottest wine bargains in 2021 are coming from Portugal”, listing a series of wine bottles under \$25 that taste as if they cost twice, all from Portugal (Elin McCoy 2021). Furthermore, during the Covid-19 outbreak, a study by McKinsey identified trends in the retail sector that will have a lasting impact, one of which is the shift to value for money (McKinsey & Company 2020). With a high-quality product and a low market price, Portuguese wine is bound to gain increasing attention from consumers.

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VI. Appendix

6.1 Appendix A: Survey



How much do you know about Portuguese wine?

The data obtained through this survey will be used for an empirical research on consumer knowledge and behaviour about wine and Portuguese wine in particular. The survey was created by Francisca Manfredi, Master in Management student at NOVA School of Business and Economics. No one else but Francisca will have access to the data which however will remain anonymous. It should take around 5 minutes to complete this survey. Thank you very much for the participation!

1. What's your age? *

- 18-27
- 28-40
- 41-59
- 60+

2. What's your nationality? *

- German
- Italian
- Portuguese
- French
- Brazilian
- British
- Other

3. Have you ever lived in Portugal (more than 6 months)? *

- Yes
- No

4. have you ever been to Portugal? *

- Yes
- No

5. How often do you consume wine on a weekly basis? *

- 0
- 1-2 times
- 3-5 times
- More

6. How knowledgeable do you consider yourself about wine? *

1 2 3 4 5 6 7 8 9 10

7. Do you use technology when choosing wine at supermarket or in a restaurant? (e.g., apps or websites) *

Yes

No

8. How much are you interested in the wine industry? *

1 2 3 4 5 6 7 8 9 10

9. Have you ever tried Portuguese Wine (excluding Porto)? *

Yes

No

10. Have you ever done a wine experience? (i.e. wine tasting, visiting a winery) *

Yes

No

11. Of the following criteria, which is the one you mostly consider when buying wine? *

- Origin
- Price
- Familiarity with the wine
- Recommendation
- Quality
- Label

12. When choosing wine, how important do you consider **origin**? *

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

13. When choosing wine, how important do you consider the **familiarity** with the wine?

*

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

14. When choosing wine, how important do you consider **price**? *

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

15. When choosing wine, how important do you consider the **label**? *

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

16. When out for dinner, do you often ask and follow the sommelier/waiter's advice on wine? *

1 2 3 4 5 6 7 8 9 10

17. How willing are you to buy a Portuguese wine? *

1 2 3 4 5 6 7 8 9 10

18. Would you be interested in a wine experience in Portugal (now or in the future)? *

Yes
 No

19. Please rank the following countries based on your consideration of their wine quality.

(1 best quality, 6 worst quality) *

Spanish wine

Australian wine

Italian wine

Other

French wine

Portuguese wine

20. Would you be interested in Organic wine? *

Yes

No

 Microsoft Forms

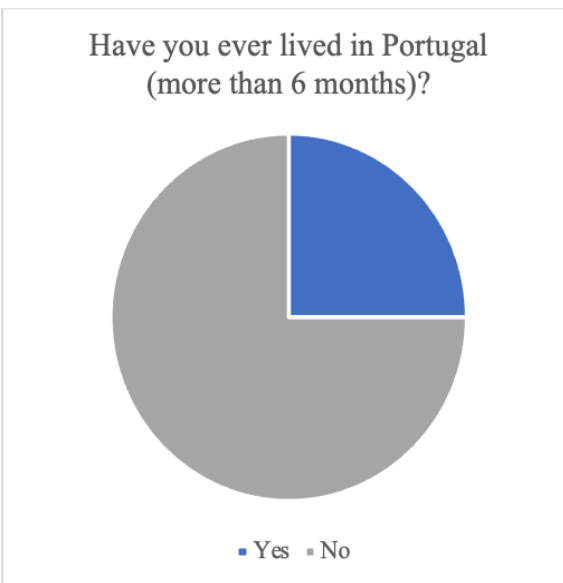
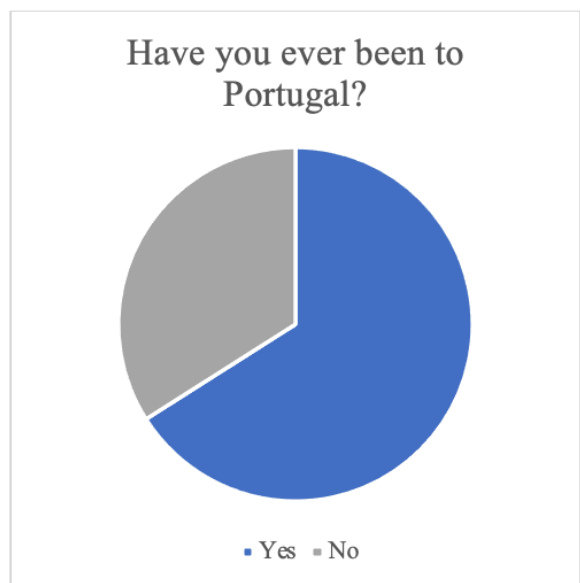
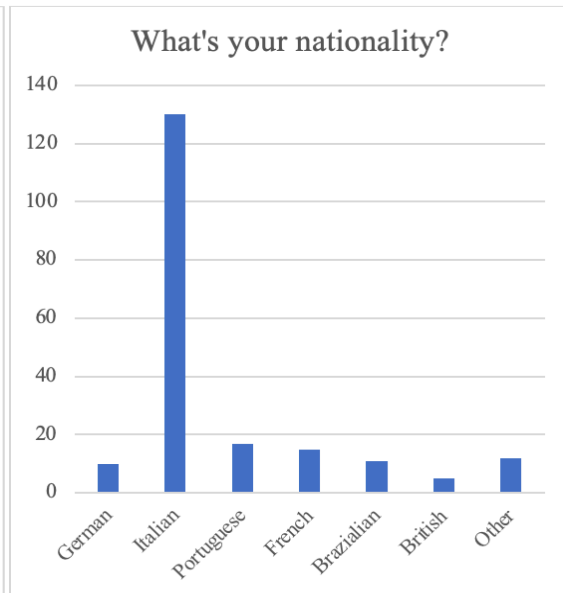
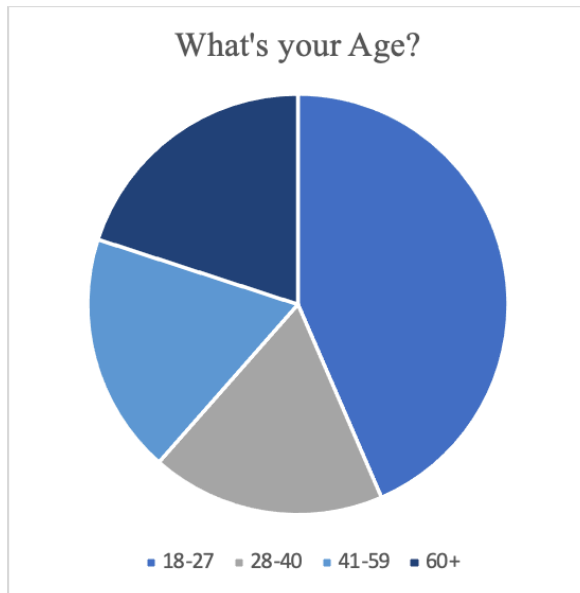
6.2 Appendix B: Variables

Dependent Variable	Description
Willingness to buy	How willing are you to buy a Portuguese wine?

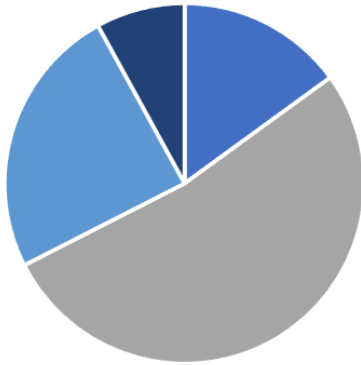
Independent Variable	Survey Question
Nationality	What's your age?
Portuguese Culture	Have you ever lived in Portugal (more than 6 months)?
Been in Portugal	Have you ever been to Portugal?
Wine Consumption	How often do you consume wine on a weekly basis?
Knowledge	How knowledgeable do you consider yourself about wine?
Wine Consumption	Do you use technology when choosing wine at supermarket or in a restaurant? (e.g., apps or websites)
Interest	How much are you interested in the wine industry?
Wine Experience	Have you ever done a wine experience? (i.e. wine tasting, visiting a winery)
Origin	When choosing wine, how important do you consider origin ?
Familiarity	When choosing wine, how important do you consider the familiarity with the wine?
Price	When choosing wine, how important do you consider price ?
Label	When choosing wine, how important do you consider the label ?
Advice	When out for dinner, do you often ask and follow the sommelier/waiter's advice on wine?

Interest in Wine Experience	Would you be interested in a wine experience in Portugal (now or in the future)?
Quality	Please rank the following countries based on your consideration of their wine quality. (1 best quality, 6 worst quality)
Italian Wine	Please rank the following countries based on your consideration of their wine quality. (1 best quality, 6 worst quality)
French Wine	Please rank the following countries based on your consideration of their wine quality. (1 best quality, 6 worst quality)
Portuguese Wine	Please rank the following countries based on your consideration of their wine quality. (1 best quality, 6 worst quality)
Spanish Wine	Please rank the following countries based on your consideration of their wine quality. (1 best quality, 6 worst quality)
Australian Wine	Please rank the following countries based on your consideration of their wine quality. (1 best quality, 6 worst quality)
Other Wine	Please rank the following countries based on your consideration of their wine quality. (1 best quality, 6 worst quality)
Organic	Would you be interested in Organic wine?

6.3 Appendix C: Demographic Variables

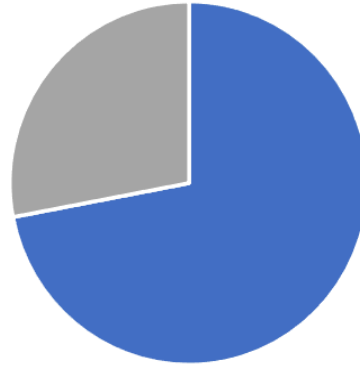


How often do you consume wine on a weekly basis?



■ 0 ■ 1-2 times ■ 3-5 times ■ More

Would you be interested in Organic Wine?



■ Yes ■ No