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The importance of e-commerce for reaching customer satisfaction in the wine sector

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Master in marketing

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Abstract

The purpose of this thesis is to find out the role of e-commerce in wine business and its capability to reach online Customer Satisfaction, in the wine sector.

The reason behind studying this topic, came up after the COVID-19 Pandemic that generated a perfect storm for the massive digitalization of people and organizations. This led us to emphasis the need for companies to embrace and explore online commerce on their way of doing business.

Our study was designed to evaluate the positive effect of e-commerce variables on reaching Customer Satisfaction through an online wine purchasing. To do so, an online quantitative survey, answered by 480 participants, was created to collect the consumers´ perceptions on wine e-commerce to discovery which variables had a positive impact on Customer Satisfaction during an online wine acquisition. After having all responses from our questionnaire, all research hypotheses were tested through a Linear Regression Analysis to provide us statistical results.

Our findings state that our three tested hypothesis, E-commerce Benefits, E-commerce Service Quality and E-commerce Information had a positive impact on reaching Customer Satisfaction while purchasing wine online, however E-commerce Benefits are the ones who have a bigger impact and influence.

The findings extend and provide an updated and truthful perspective to the existing literature, about the consumer´s opinion of e-commerce in the wine sector. Our findings contribute for a more precise and accurate insights about the role of e-commerce in the wine sector and which variables positively impact the most when it comes to reach Customer Satisfaction when buying wine online.

Key Words: Wine companies, Wine Business, Customer Satisfaction, E-commerce

Resumo

O objetivo desta tese é o de descobrir a importância do comércio eletrónico no mercado dos vinhos e a sua capacidade de promover satisfação do consumidor online, no setor do vinho.

A razão por detrás deste tema, surgiu após a pandemia Covid-19 que gerou uma tempestade perfeita para a digitalização em massa das pessoas e das organizações. Tal levou-nos a enfatizar a necessidade das empresas adotarem e explorarem o comércio online como uma forma de fazer negócio.

O nosso estudo foi desenhado para testar o efeito positivo do comércio eletrónico na promoção da satisfação do consumidor através da compra online de vinhos. Para tal, foi elaborado um questionário quantitativo online, respondido por 480 pessoas para recolher a perceção dos consumidores sobre o comércio online de vinhos de forma a descobrir que variáveis tinham um impacto positivo na satisfação do consumidor durante uma compra online de vinhos. Após a recolha de todas as respostas do nosso questionário, todas as hipoteses em estudo foram testadas através de uma regressão linear de forma a fornecer-nos resultados estatísticos válidos.

Os resultados mostram que as nossas hipoteses em estudo, Benefícios do Comércio Eletrónico, Qualidade de Serviço do Comércio Eletrónico e Informação do Comércio Eletrónico tem um impacto positivo na satisfação do consumidor durante uma compra online de vinhos, porém é a variável Benefícios do Comércio Eletrónico que mostrou ter um maior impacto positivo e influência final na satisfação do consumidor.

A pesquisa extende e fornece uma prespectiva atualizada e verdadeira à literatura já existente, a respeito da opinião dos consumidores sobre o Comércio Eletrónico no setor dos vinhos. Os nossos resultados contribuem para uma visão mais precisa e exata sobre a importância do Comércio Eletrónico no mercado dos vinhos e quais as variáveis que positivamente mais impactam a satisfação do consumidor durante uma compra online de vinhos.

Palavras chave: Empresas Vinicolas, Mercado do Vinho, Satisfação do Consumidor, Comércio Eletrónico

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1. Introduction

With the spread of the Pandemic in 2020, all industries got blocked by govern restrictions and healthy measures concerning the Covid-19 disease. The Wine sector was also affected by the world´s conjuncture, and many producers were forced to use e-commerce as the only tool to sell.

The recent Covid-19 Pandemic has disrupted several markets that were relatively well established and generated a big "earthquake" in all markets. A key variable that we are now able to study comparing the "pre" and "post" Covid times, is the increased digitalization and rapid adoption of foretold trends, that had been predicted to happen in a long term and arrived in just one year, as the implementations of online classes, home office, healthcare apps, digital certificates, or online commerce (Barnes, 2020).

The "new normal" created an opportunity to develop new ways of communication, promotion and selling through online e-commerce.

In fact, the wine sector was confronted with a deeper problem because in the wine industry producers tend to be relatively slow to adopt internet and social media marketing strategies to promote and sell their wines (Pucci et al., 2019). That placed the industry in a difficult position during the lockdown as it was highly dependent on selling in restaurants, hotels, supermarkets, groceries, or bars, which made the industry deeply dependent on the on- trade channel (physical stores).

The digitalization of wine companies may be an opportunity to reach different targets such as millennials, for example, who have a high level of internet proficiency. This opportunity appears to be very important for wine producers where the domestic markets have a persistent risk of oversupply, with many brands and producers, the discovery of new consumer targets, can be an interesting strategy, instead of putting pressure on the usual consumers (Nassivera et al., 2020).

As soon as the industry is capable to promote and boost its online presence by providing a high-quality service level through an e-commerce platform, reaching customer satisfaction as it happens in physical stores, the sector will be able to grow and diversify the offer delivered to consumers as well as decreasing the dependency on just one channel.

In recent years, companies have been facing several challenges due to the astonishing acceleration of economy and society, creating difficulties and challenges for companies to follow and adapt to different environments in the VUCA (volatility, uncertainty, complexity and ambiguous) world that we live today (Bennett & Lemoine, 2014).

The acceleration of economy during the pandemic period denounced the lack of preparation and adaptability of traditional business (generally with low levels of digital maturity) to continue its current core businesses. This was a call for wine managers to understand that less digital mature organizations are more fragile and less flexible when competing with others that have higher digital maturity (Fletcher & Griffiths, 2020).

The relevance of the topic when applied to wine business is that the industry may benefit of digitalization and particularly the tools provided by Internet, that generate a source of competitive advantage for the sector by providing access to alternative sales channels capable of helping overcome the commercial limitations (Bernal-Jurado et al., 2021).

"The Importance of e-commerce for reaching customer satisfaction in the wine sector"

The theme was chosen based on what was pretended to study and analyze in this dissertation, which is the role of e-commerce for reaching customer satisfaction through an e-commerce platform for the wine sector.

"Can e-commerce promote customer satisfaction while purchasing wine online?"

E-commerce has raised in most of the industries however when it comes to wine that trend is not developed and mature as it is in other markets. Wine is still a traditional product, with a conservator audience that sometimes avoids using technology to purchase their products.

The aim of this dissertation is to evaluate the role of e-commerce to reach customer satisfaction in the wine sector.

The Covid-19 pandemic forced all on-trade establishments to close doors during several months in 2020 and 2021, which created huge problems for wine producers, that mainly sold their products in groceries, supermarkets, restaurants, and hotels.

This dissertation will be structured in eight parts.

The first part is the "Introduction" and it identifies the topic of this thesis. A brief explanation about the dissertation, as the type of Master´s Project, problem statement and topic relevance, as well as the research question, objectives, and dissertation structure.

The Literature review, which is the second part, contains the academic review about the topics under analysis in this thesis, as Wine Business, Wine Companies, Customer Satisfaction, E-commerce Service Quality, E-commerce Information, E-commerce Benefits. The explanation and brief review about these topics will conduct to the development of research hypothesis in the following part of the thesis.

The third part of this dissertation is the construction of the Conceptual Model and Definition of Variables, where a more detailed and structured idea about which are the independent variables that may impact the dependent variable under analysis.

The fourth part is the Methodology, where a detailed explanation will be provided about the research approach chosen for this thesis, sample size, methods of measurement and scales used for data collection.

The fifth part will be the results of the research, followed by their discussion and the validity of the research hypotheses.

Finally, part seven, eight and nine will include the main conclusions of the study, research limitations and future research.

2. Literature Review

2.1 Context

The wine business has always been studied in previous academic and nonacademic studies however these times of Pandemic lead us to a new and disruptive "new age". Industries, consumers, and key players in all sectors were involuntary forced to change and adapt themselves daily to face a pandemic conjuncture.

The multiple lockdowns that the world faced during 2020 and 2021 generated a perfect storm for the digitalization of people and organizations. This leads to the main focus of this study, which is the need for enterprises to embrace and explore e-commerce. The wine sector was chosen for being a very conservative sector where on-trade channels still are the gross number of sales in amount and volume. For these reasons, the aim of the study is to find out the role of e-commerce in wine business and its capability to reach online customer satisfaction.

2.2 Wine Business

Wine was initially used locally both as a beverage and for religious purposes, but soon was traded throughout the Western World. What we refer to as wine brands and regions of origin today (Portugal, Spain, France, Italy, Greece) were in the past part of the Egyptian, Greek, and Roman empires (Orth et al., 2007).

Recently, wine businesses aroused the attention of consumers and its role on economies has increased worldwide. A vast literature focuses on the wine industry, as this field is one of the most representative economic activities in most countries, playing an important role as an exportation product and tourism attraction (Obermayer et al., 2021).

When it comes to tourism, wine has had a key role in promoting regional travelling locations. As many typical regional products, wine can be defined as a "territorial intensive

product" (TIP) since it contains a strong reference to the identity of the territory in which it is produced (Karagiannis & Metaxas, 2020, p.2).

The wine industry is considered a mature and traditional industry with centuries of existence, where to reach superior quality is not just about having better resources but managing better the resources under control. As the market is very fragmented, achieving economies of scale is difficult especially for small and medium wine producers (Newton et al., 2015) and (Verdú Jover et al., 2004).

In the wine sector, perceived quality is very complex to define specially when it comes to taste. Verdú Jover et al., (2004) suggests using two different scales for food and beverage products, one for intrinsic attributes and another for extrinsic attributes. Consumers can evaluate wine by evaluating their intrinsic and extrinsic factors.

Extrinsic factors	Intrinsic factors
1. Reputation	1. Age
2.Region	2. Harvest
3. Appellation d´Origine	3. Alcohol content
4. Distribution channels	4. Varieties
5. Advertising and propaganda	5.Taste
6. Bottling and labelling	6.Aroma
7. Brand	7.Colour
8. Price	

Table 1- Red wine quality dimension. (Verdú Jover et al., 2004)

The industry is now facing some risks and opportunities that may change the wine sector in the next years. Climate change, water availability, labor issues, developments in routes to market (mainly digital), changing tastes among consumers, social issues, political pressure, and competitive pressure to market are some issues impacting the sector in the future (Lockshin & Corsi, 2020) .

2.2.1 Wine Companies

According to Bresciani et al., (2016) the wine industry is composed by three distinct groups of companies:

- Companies that produce grapes and wine, and then commercialize wine.
- Companies that buy grapes and then produce and commercialize wine.
- Companies that buy and commercialize wine.

Although the wine business sector is hardly to describe, from a producer perspective, there were identified two typologies of wine producers: Cooperatives and Investor-owned firm. The first one, more oriented towards bulk wine production and mass markets, while investor-owned offer more expensive and selective exclusive/premium wines, more focused on niche markets (Di Vita et al., 2019) .

In Europe, especially in the oldest producing countries as Portugal, Italy or Spain, the domestic market is composed of a reduced number of large wine companies with a significantly larger number of small and medium enterprises (Casali et al., 2018; Rebel et al., 2019).

In the wine sector, there are two main distribution channels:

   - A specialist retailer.

   - A large supermarket chain.

The first one is characterized by low-volume and a higher price market segment, whereas the second one deals in high volumes at a lower price, generally.

Distribution channels for off-trade retailers (specialist retailers and supermarkets) and on-trade premises (restaurants, hotels, and bars) are shown in Figure 1.
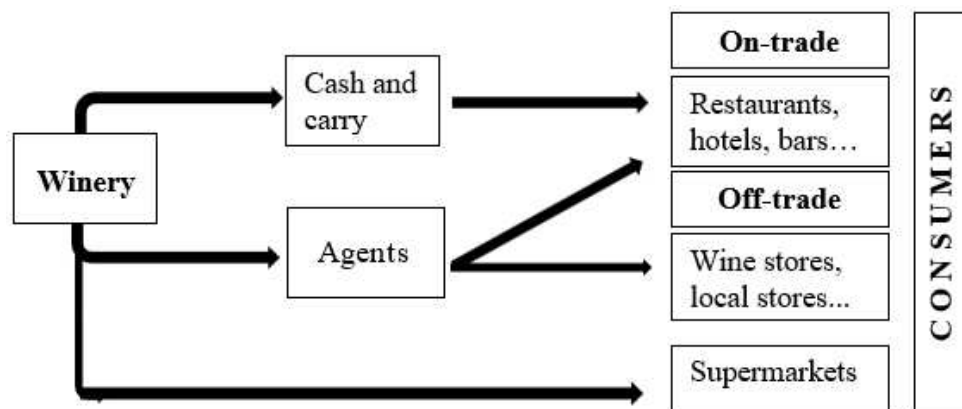
Figure 1 - Distribution Channels of Portuguese wine from the winery to consumers (Rebel et al., 2019)

During the pandemic, wine enterprises specially of small and medium size, had their main distribution channels closed – the on-trade channels (Restaurants, hotels, bars). This generated dramatic difficulties for most wine producers, more precisely, in markets composed mainly of small and medium size family companies (Casali et al., 2018).

According to Casali et al., 2018 who studied the SME´s innovation propensity and the choice of distribution channels, concluded that the greater the innovation propensity, the more the SMEs in the wine industry have preference for the most direct distribution channel strategy.

The reality is that wholesalers and supermarkets have a preference to sell and stock only top-selling brands at the expense of small and new labels. This is destructive for wine industries

such as the Portuguese, Italian or Spanish, which are composed mainly of small, often micro wineries with an extraordinarily rich variety of vines but that have difficulties competing on price.

2.3 Customer satisfaction

Customer satisfaction has been studied by several researchers, however there is no consensus on its definition, it´s important to define it before thinking about how to measure it (Liuqu et al., 2015). Customer satisfaction is somehow an indicator of the customer's belief of the probability of a service delivered, leading to a positive sensation/feeling (Rita et al., 2019).

Customer satisfaction can be defined as the result of comparing the expectation and the experience, this means the consumer is pleased as soon as the result provided by the product or service meets or exceeds their previous expectations (Vasic et al., 2019). This means that customer satisfaction results from experiencing a better performance than expected (positive disconfirmation), while dissatisfaction results from experiencing performance worse than expected (Yi & Nataraajan, 2018). However, there are other interpretations and definitions of customer satisfaction, "we can define customer satisfaction as a cumulative evaluation of a customer's purchase and consumption experience to date" (Auh, & Jonshon, 2005, p. 3).

The lack of a consensus definition for satisfaction creates three serious problems for consumer satisfaction research: selecting an appropriate definition for a given study; operationalizing the definition; and interpreting and comparing empirical results. These three problems affect the basic structure and outcomes of marketing research and theory testing. (Giese, 2002)

According to The American Customer Satisfaction Index (ACSI) as it is shown in Figure 2, overall customer satisfaction has three antecedents: Perceived quality, Perceived value, and Customer expectations.
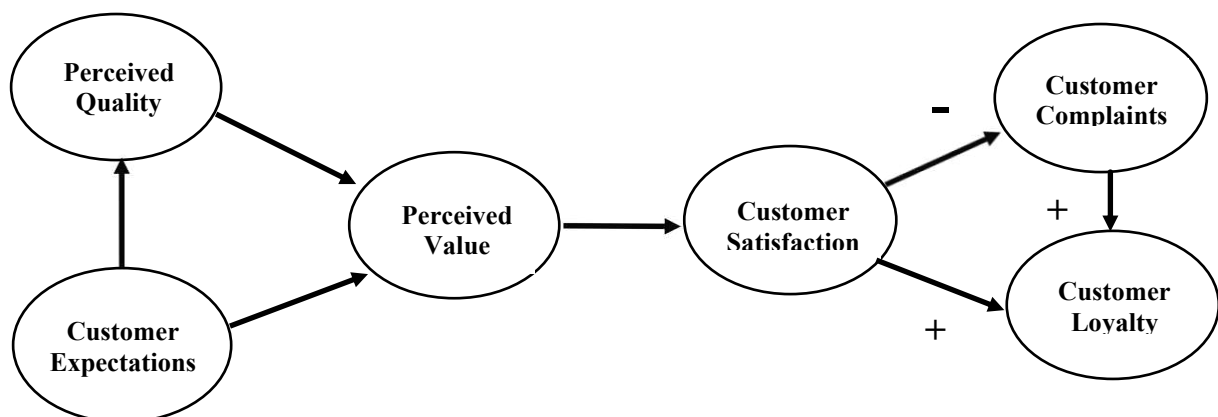

Figure 2 – The American Customer Satisfaction Index - ACSI Model (Fornell et al., 1996)

The first cause of overall customer satisfaction is perceived quality, which is the served market's evaluation of current consumption experience and is expected to have a direct and positive effect on consumer satisfaction. Perceived quality can be divided into two components:

1 - Customization, which is the degree of offering customized products/services to meet heterogeneous customer needs.

2 - Reliability, which means the level the firm's offering is reliable, consistent, standardized, and free from deficiencies.

The second determinant of overall customer satisfaction is: Perceived value or the perceived level of product quality in relation to the price paid.

By adding perceived value, which includes price information, it increases the comparability of results across companies, industries, and sectors. Distinguishing between quality and value provides information regarding the degree to which satisfaction is price vs quality (quality given price and price given quality).

The third determinant of overall customer satisfaction is Customer expectations, which is linked to the served market's expectations that represent the previous consumption experience given the firm´s actual offering and the supplier´s capability to deliver quality in the future.

According to Molla & Licker (2001), depending on the nature of the e-commerce model underlying the system, the product offering and the purpose of the e-commerce system, it is possible to differentiate between two main facets of customer e-commerce satisfaction - (1) satisfaction with the core product and service and (2) satisfaction with the process and system used to deliver the core product and service.

This study focus more on the second one, which is the process of delivering service through an ecommerce platform.

It is not easy to determine which and how many components customer satisfaction is composed of. It is significant to identify the variables of consumer satisfaction since they vary according to the specific business sector and serve only as guide for upcoming research (Vasic et al., 2019).

Schaupp & Bélanger, (2005) have identified three categories of determinants that could affect consumer satisfaction towards online shopping. They are technology factors (security, usability, website design, and privacy), shopping factors (convenience, trustworthiness, and delivery) and product factors (merchandising, product value and product customization). However, other studies suggest that the determinants of consumer satisfaction through e-commerce are website design, security, information quality, payment method, e-service quality, product quality, product variety, and delivery service (Guo et al., 2012).

2.4 E-commerce

Electronic commerce, or e-commerce, is a modality of trade that uses the Internet for effecting commercial transactions (Mainardes et al., 2020).

The e-commerce presence in our days is correlated with the proliferation of smartphones, which provide an easier and faster way to access the internet. There are several single features of smartphones placing it as a major basis for e-commerce, as it allows for a safer access device, fewer difficulties compared to desktops, a location-enabled GPS feature, and finally, a supplementary payment tool (Dumičić et al., 2018).

Some concerns about e-commerce have been linked to trust and perceived risk, some studies have demonstrated that the perceived risk of online shopping negatively influences consumers' purchase intentions and actual purchase behaviors (Dai et al., 2018). Trust was found to be a major predictor of consumer attitudes toward online shopping (Chetioui et al., 2021).

The development of security protocols, Payment Card Industry (PCI) and Security Standards Council (SSC) acted as the key sparks of e-commerce evolution (Moagar-Poladian, 2017). As online platforms have proven to be efficient during the pandemic times, the increase in confidence in e-commerce creates the perfect conditions to explore it. According to Train (2021) on his study about "Managing the effectiveness of e-commerce platforms in a pandemic", the results stated that pandemic fear positively moderates the relationship between perceived effectiveness of e-commerce platforms and economic benefits.

Concerning e-commerce in the wine market, the pandemic generated a huge increase in demand for online wine stores and apps due to the lockdowns and Covid-19 restrictions measures, which closed the on-trade channels.

A recent article from (Compés et al., 2021) that analyzes the impact on consumer behavior and the differences between the lockdown period and pre-lockdown in the Iberian Market, concluded that, concerning online purchasing, 27.7% of the respondents had a wine app on their smartphone and 46% received online wine offers during the lockdown. A variation in procurement for wine was also observed with an increase in online purchases for wine and private cellars, while demand through the other channels decreased.

The importance of e-commerce as a tool for wine selling, should be considered as a structural aspect and wineries should take it into account in the future, as part of their sales strategy

2.4.1 E-commerce benefits

E-commerce changed the way business is done, promoting the emergence of new economic actors, new business models and opportunities for consumers and companies (Mainardes et al., 2020).

Electronic platforms and marketplaces provide economies of scale and network effects, which provides value chains a high degree of organizational (outsourcing) and locational (offshoring) flexibility while purchasing/selling goods or services on a global basis, which creates a positive impact on companies (Palese & Usai, 2018).

Chetioui et al., 2021 suggests that clients will be willing to move to online shopping only if they are satisfied with the extra benefits, such as superior quality, convenience, lower costs, or time saving. Arora and Aggarwal (2018) concluded that there are three key advantages associated with online shopping: price, convenience, and recreational benefits.

The existing literature leads us to believe that there may exist a link between e-commerce benefits and Customer satisfaction. As reported previously, customer satisfaction is the result from experiencing a better performance than expected, and it can be complemented in an online service perspective with the benefits that e-commerce is able to add and complement when compared with the "standard" in-shop service delivered.

Thus, this led us our fist hypothesis:

H1: E-commerce benefits have positive impact on customer satisfaction, in the wine sector.

Wang & Herrando, (2019) suggest that e-commerce platforms increase interactions between sellers and consumers, and among consumers, as these interactions impact increasing online shopping behavior and generate economic benefits.

When discussing the topic for the benefits delivered in the wine sector, according to Fiore (2016), there are numerous profits for companies to adopt the direct channels that e-commerce allows as direct selling promotes efficiency (local trade) and delivers a quality service to the final costumer with high added value in terms of wine safety and quality assurance, lower prices, less intermediates, more loyalty, and a direct relationship.

This means that e-commerce can deliver a quality service tangible while reaching customer satisfaction through online, helping small and medium size producers to survive in unpredictable situations, being able to adapt its business in a pandemic situation, not being exclusively dependent on on-premises consumption. The producers that don´t consider e-commerce as an advantage for their businesses, will lose customers to the closest competitors

2.4.2 E-commerce information

Information has been considered an important strength to modern business and e-commerce has raised the role of content, information, data, experience, or knowledge to higher levels of significance (Molla & Licker, 2001).

The role of information and website content in an e-commerce level, allows consumers to attain a detailed understanding of new products, service offerings, and their attributes (Cho et al., 2014).

In the wine market, especially if we are talking about a new wine purchase, there is often no opportunity to taste before buying, so it means that in the moment of evaluation, consumers cannot consider its intrinsic sensory characteristics as flavor, color, alcohol, or taste. This means that consumers pick a specific bottle of wine by evaluating any available information they can find, especially extrinsic attributes as Brand reputation, region, price, label, or technical sheets, which makes websites/shops a vital asset for promoting the brand and the wine for consumers, as they don´t want to make the wrong purchase (Boncinelli et al., 2019).

Previous studies have linked information as a critical factor for online user satisfaction with a positive correlation between information quality and online user satisfaction (Lin et al., 2011; Miao et al., 2021; Vasic et al., 2019).

This leads to the question: Does disposable information have an impact on customer satisfaction through a wine e-commerce platform?

H2: E-commerce Information has positive impact on customer satisfaction, in the wine sector.

Wine websites attempt to offer valuable information to attract and retain consumers. In an online wine shop, information provides content to consumers that lack knowledge about wine with valuable insights about wine regions, grape varietals and sensory-related descriptions, including aroma, palate or appearance, which may support consumers to make a better purchase decision (Cho et al., 2014).

Online wine shops, from small to big wineries, offer a larger portfolio of wines with reviews from previous clients, which is not possible to achieve in physical stores. They also deliver added assistance to consumers including suggestions, advice, and helpful information for a successful purchase (Jorge et al., 2020).

Previous studies have linked information as a critical factor for online user satisfaction with a positive correlation between information quality and customer satisfaction (Lin et al., 2011).

2.4.3 E-commerce Service quality

Although service quality may be something difficult to measure and sometimes may be undefined, for consumers it´s important and plays a key factor when choosing a specific brand instead of another.

Previous research has defined service quality as the measure of how well the service delivered to the consumer matches their previous expectations (Parasuraman et al., 1985).

Derived from service quality, there is "e service quality" that "can be defined as the consumer's evaluation and judgment of the excellence and quality of the e-commerce service delivery in the online market. Just like service quality, however applied to online" (Santos, 2003, p. 235).

Palese & Usai, (2018) suggest that especially small and medium organizations must move online to prevent a loss of market share. However, their lack of technical knowledge and experience with online, makes the transition to e-commerce problematic. Yet, customer service remains a key determinant of e-commerce success and it drives customer satisfaction.

There is some literature highlighting the link between online customer's satisfaction and e-service quality, which is influenced by cognitive aspects and affective online experience shopping through websites (Rose et al., 2012) as well as easy access to information, or easy transaction. Jorge et al., (2020) report that online customer's satisfaction is also influenced by product, service quality and price.

With that said, the role of e-commerce service quality on customer satisfaction can be explored, however in the wine industry, which will be the second hypothesis.

H3: E-commerce Service Quality has positive impact on customer satisfaction, in the wine sector.

As previously explained, e-service is different from traditional services, because the former is based on the relationship between customers and service providers. Since there is no human contact via digital, the interaction takes place through technology.

Li & Suomi (2009) suggest that firms try to match human behavior with technology, but the interaction is different, since some aspects of human interaction are difficult to implement only with technology. This includes characteristics such as courtesy, friendliness, helpfulness, care, commitment, flexibility, and cleaning.
Mason et al., (2015) advocate that e-service quality is becoming more and more critical for companies to retain and attract customers. They also report that what brings online customers back to a company's website is a sense of loyalty, which is a consequence of a good e-service, which also has a strong impact on customer satisfaction.

3. Conceptual Model and definition of variables

The present study uses a model (Figure 3) adapted from Vasic et al. (2019) tested model to study the hypotheses mentioned previously, in order to understand the impact of e-commerce service quality, information, and benefits on customer satisfaction.

According to the analysis conducted in the literature review, the following hypotheses were developed:

H1: E-commerce benefits have positive impact on customer satisfaction, in the wine sector.

H2: E-commerce Information has positive impact on customer satisfaction, in the wine sector

H3: E-commerce Service quality has positive impact on customer satisfaction, in the wine sector.

The main goal is to analyze if these three independent variables (service quality, information, and e-commerce benefits) influence, or not, the dependent variable (customer satisfaction).

For the defined hypotheses to be researched and tested in more detail, a conceptual model is introduced and shown in Figure 3.
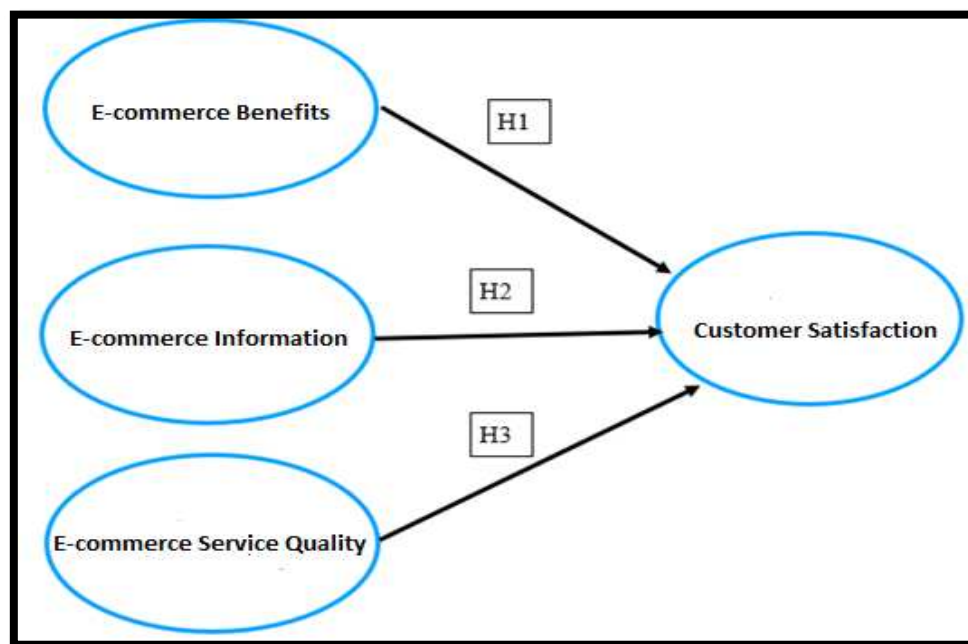

Figure 3: Conceptual model: Adapted from (Vasic et al., 2019)

The adaptation of this conceptual model from a piece of literature aims to use an already used and tested conceptual model that somehow is close to this study and to assess the credibility and trustworthiness of the research hypotheses mentioned above.

On table 2, the conceptual model variables are presented, as well as the respective items and References.

In addition to the specified items and variables, the survey also includes other characteristics of the sample related to gender, age, education, frequency of Internet usage or awareness about e-commerce (table 2).

Variables	Items	
E-commerce Benefits	Convenience and comfort	Arora & Aggarwal, 2018; Fiore, 2016; Tran, 2021; Wang & Herrando, 2019; Vasic et al. 2019
	Real time offers (24/7)	
	Opportunity to discover new brands and wine producers (national or international)	
	A Vast choice of online wine e-shops with discounts and promotions	
	Time saving	
E-commerce Information	Timely Information (prices & promotions)	(Boncinelli et al., 2019; Chen et al., 2017; Cho et al., 2014; Mason et al., 2015; Miao et al., 2021; Molla & Licker, 2001; Vasic et al., 2019;)
	Accurate Information (Degree of alcohol, grapes, year, time spent on barrels)	
	Understandable Information (Winery, winemaker)	
	Updated information	
	Credible information	
E-commerce Service quality	Payment method	(Jorge et al., 2020; Li & Suomi, 2009; Mason et al., 2015; Rose et al., 2012; Santos, 2003)
	Customization of bottles and packages	
	Security	
	Confidence on wine E-commerce service quality delivered	
	Wine E-commerce functionality	
Customer Satisfaction	Satisfaction with service delivered	(Auh & Johnson, n.d.; de; Fornell et al., n.d.; Giese, 2002;; Molla & Licker, 2001; Rita et al., 2019; Vasic et al., 2019; Yi & Nataraajan, 2018)
	Value added for the consumer	
	Experience of usage	
	E-commerce Satisfaction	
	Excellence of resources and functionality	

Table 2 – Conceptual Model variables, items and references

4. Research Methodology

This study uses an online survey to evaluate consumers' insights on wine e-commerce, their perceptions and thoughts about previous purchases experiences in an online wine shop, and to determine which e-commerce variables have an impact on customer satisfaction.

To do so, it´s important on this part to explain the methodology used, which will consist in describing the thesis´s sampling method (Data collection, type of survey), demographics and sampling profiles (Target population, number of respondents, demographic variables) and the

data analysis process (scales, tests and statistic program used to characterize the sample and analyze the data).

4.1 Sampling method
The data collection was conducted for 4 months, between October 2021 until January 2022.

A quantitative approach was chosen with the objective of quantifying data and simplify results from our sample of population. This method also allows the analysis of a large number of representative cases in a structured way, that is furtherly studied in order to recommend a final course of action (Malhotra, 2010). An online questionnaire was chosen to test our hypotheses and the questionnaire´s idiom was Portuguese, so it would be easier for the local respondents to answer, without any type of language miscomprehension.

The choice for an online questionnaire was due to its main advantages as an easier access of the participants to the questionnaire, collecting results and confidentiality of the answers (Malhotra, 2010.)

The data collection was conducted for 4 months, with a total of 480 respondents. The sample size was projected according to (Lohr et al., 2010)

4.2 Demographics and participants profiles
The respondents included into the survey were mainly consumers who occasionally or regularly purchased wine online.

Seven variables were used to characterize the demographic feature of our sample, these complementary variables help to have a better overview about our sample and to make more detailed conclusions.

These variables allow us to have a direct view about the groups who purchase wine online the most, in the Portuguese market. The survey covered an adequate number of respondents of both sex with 259 males and 221 females.

A sample size of 480 applicants of all ages were selected with the largest group of participants being part of the range between 18 and 25 years old (40% of the total). Considering the wine purchasing frequency 38% buy wine monthly and regarding timeline, 46% of respondents reported to have started to buy wine online in last year, while just 11% purchase wine online for more than five years.

Demographic variables		N° of respondents	Percentage (%)
Gender	Male	259	54 %
	Female	221	46 %
	18:25	192	40 %

Age	26:35	62	13 %
	36:45	77	16 %
	46:54	110	23 %
	>55	39	8 %
Educational level	Secondary level	144	30 %
	Bachelor's degree	235	49 %
	Master's degree	81	17 %
	MBA	5	1 %
	PHD	5	1 %
	Other	10	2 %
Wine purchasing frequency?	Weekly	62	13 %
	Monthly	183	38 %
	Trimonthly	137	29 %
	Annually	98	20 %
How long do you purchase wine online?	<1 year	223	46 %
	2 to 5 years	204	43 %
	>5 years	53	11 %

Table 3 – Demographic Data

4.3 Data analysis process

The questions in this questionnaire were developed based on scales of attitudes which means that all statements were evaluated according to a 5-point Likert scale from: 1 - Strongly disagree to 5 - Strongly agree. The Likert Scale uses fixed choice answers with the goal of measuring opinions and levels of agreement/disagreement (Mcleod, 2008).

The exported data was analyzed through Statistical Package, for Social Sciences (SPSS) IBM SPSS Statistics 28.

For the statistical characterization of the sample, frequency tables were created in order to present both absolute and relative values, and also to identify the mode for each one of the variables. In addition, a Univariate Analysis was used for each of the items that compose the scales of E-commerce service quality, E-commerce Benefits, E-commerce information and Customer Satisfaction, through different measures, as the Mean, St. Deviation, Minimum and Maximum, and the Confidence Interval at 95% to the mean. At last, the tests used to study the developed hypotheses were mainly Linear Regression. With this test, it is possible to understand if the independent variables have a positive effect on Customer Satisfaction in the wine sector.

5. Results

5.1 Univariate Analysis

To better understand the configuration of the variables in this study and also to have a general overview of them, a Univariate Analysis was performed. By analyzing the items that compose each independent variable, we can comprehend deeper the importance of each item on the variable under study. Table 4 shows the Mean, the Median, the Standard Deviation, and the Minimum and Maximum values, according to the 5-point Likert Scale used in the questionnaire.

Dimension	Variable	Item	Mean	Std. Deviation	Mini	Max
E-commerce Information	IeC1	**Timely Information (prices & promotions)**	**4,20**	,881	1	5
	IeC2	**Accurate Information (Degree of alcohol, grapes, year, time spent on barrels)**	**4,17**	,796	1	5
	IeC3	**Understandable Information (Winery, winemaker)**	**4,10**	,766	1	5
	IeC4	**Updated information**	**4,00**	,779	1	5
	IeC5	**Credible information**	**4,09**	,811	1	5
E-commerce Service Quality	SQ1	**Easy Payment method**	**3,91**	,730	1	5
	SQ2	**Customization of bottles and packages**	**3,89**	1,009	1	5
	SQ3	**Security**	**4,05**	,835	1	5
	SQ4	**Confidence on wine E-commerce service quality delivered**	**3,99**	,865	1	5
	SQ5	**Wine E-commerce platform functionality**	**3,91**	,798	1	5
Customer Satisfaction	CS1	**Satisfaction with service delivered**	**4,08**	,707	1	5
	CS2	**Value added for the consumer**	**4,01**	,750	1	5
	CS3	**Experience of usage**	**4,20**	,826	1	5
	CS4	**E-commerce Satisfaction**	**4,20**	,691	1	5
	CS5	**Excellence of resources and functionality**	**3,98**	,804	1	5

E-commerce Benefits	CnB1	Convenience and comfort	**4,08**	,734	1	5
	CnB2	Real Time wine offers (24/7)	**4,07**	,729	2	5
	CnB3	Opportunity to discover new brands and wine producers (national or international)	**4,04**	, 798	1	5
	CnB4	A Vast choice of online wine e-shops with discounts and promotions	**4,14**	,836	1	5
	CnB5	Time saving	**4,15**	,822	1	5

Table 4 – Univariate Analysis

5.2 Scale of Reliability Analysis

On table 5, a Scale Reliability Analysis was performed to check the internal consistency of the scales. To guarantee accurate findings, the Cronbach's Alpha resulting from this analysis should be higher than 0.6 for the scale to be accepted as reliable, or preferably greater than 0.7, which is the case of each variable.

Scales	Number of items	Cronbach´s Alphas
E-commerce information	4	0,814
E-commerce Service quality	3	0,87
E-commerce benefits	5	0,898
Customer Satisfaction	5	0,845

Table 5 - Scale of Reliability Analysis

After testing the research hypotheses and confirming the validity and reliability of the scales used, four variables were created.

The variables assessed in the survey, E-commerce Information (composed by four items), E-commerce Service quality (with two items), E-commerce Benefits and Customer Satisfaction (both composed by five items), were the base for the creation of the new variables. Consequently, four new variables were computed as an average of all the items that compose each construct mentioned above (Average_Information, Average_SQ, Average_EBenefits, and Average_CS).

5.3 Linear Regression Analysis

The hypotheses were tested through a Linear Regression, as both dependent and independent variables are metric. The test allows to verify the effect of the independent variables on the

dependent variable and to check if online wine e-commerce benefits, service quality and information have a positive or negative impact on Customer Satisfaction.

Independent Variables	Dependent Variable	Adjusted R-Square	Anova Sig.	Unstandardized Beta	Sig.
Average_EBTs				0,345	0,001
Average_ESQ	Average_CS	0,389	0,001	0,257	0,001
Average_EInfo				0,13	0,001

Table 6 - Linear Regression Analysis to test H1, H2 and H3

Through the value of the Adjusted R-Square, it is possible to extract the level of variance in the dependent variable, explained by the three independent variables. Therefore, it can be stated that 38,9% of Customer Satisfaction through online e-commerce (dependent variable) is explained by E-commerce Benefits, Service Quality, and Information.

After doing an ANOVA test, we can confirm or reject that the model has explanatory power. For that, with a 95% confidence level, we can say that the model composed of E-commerce Benefits, Service Quality, and Information has explanatory power since it presents a p-value of 0.001 (below the significance level of 5%). Furthermore, according to the Coefficients section, the three independent variables are statistically significant (p-value < 0.05) and, thus, have an impact on the dependent variable.

Regarding the exploratory variables in specific, and starting by E-commerce Benefits, we can conclude that it has a positive impact on Customer Satisfaction, with an Unstandardized Beta of 34.5%. The same happens with E-commerce Service Quality and Information, with Unstandardized Betas of 25.7% and 13%, respectively.

6. Discussion

This thesis aims to study the "The Importance of e-commerce for reaching Customer Satisfaction in the wine sector", for that we decided to take the model of Vasic et al., (2019), who explored "The Influence of Online Shopping Determinants on Customer Satisfaction in the Serbian Market" and we adapted their conceptual model to find the main E-commerce variables that lead to Customer Satisfaction in the wine sector. From that some interesting results were found:

H1: E-commerce benefits have positive impact on customer satisfaction, in the wine sector.

Primarily, through the previous analysis of the Linear Regression test (see Table 6), an impact of the E-commerce Benefits on Customer Satisfaction was confirmed.

The Unstandardized Beta of 0.345 represents representative positive impact as, for each unit added in the variable, the general increase would be positive, but lower than the unit. Thus, **accepting H1**. This result is aligned with (Vasic et al. 2019; Arora & Aggarwal 2018).

Following our analysis to our second hypothesis, **H2: E-commerce Service quality has positive impact on customer satisfaction, in the wine sector.** We also have a positive impact on Customer Satisfaction through e-commerce in the wine market. After our linear regression analysis, we can conclude that there is also an impact on our dependent variable, which allow us to **accept H2**, although with a lower score of 0.257 on the Unstandardized Beta.

These results fit with existing literature as (Vasic et al., 2019, Miao et al. 2021, Mason et al., 2015 and Santos 2003), who also concluded that E-commerce Service Quality had a positive impact on reaching online Customer Satisfaction.

Finally, we have our third hypothesis, **H3 "E-commerce Information has positive impact on customer satisfaction, in the wine sector**. Also has a positive impact on Customer Satisfaction on wine e-commerce, which permits us to **accept H3** as well, however it´s the variable with lower Unstandardized Beta with a score of 0.13, meaning that by adding a unit to the variable, the overall impact will be substantially lower. These findings corroborate with previous studies that linked information as a critical factor for online Customer satisfaction with a positive correlation between information and online Customer Satisfaction (Lin et al., 2011; Miao et al., 2021; Vasic et al., 2019).

Even though the results show a positive impact, some of them are quite low, especially E-commerce service quality and E-commerce Information.

E-commerce benefits was the variable with the biggest acceptance score among our respondents, showing that E-commerce benefits as Real time offers (24/7), Convenience and comfort, Time saving, Immense choice of E-commerce platforms with discounts and promotions and the opportunity to discover new brands and producers (national or international) are the most valuable for reaching Customer Satisfaction through an online platform in the wine market.

7. Conclusions

The current study aims to evaluate the role of e-commerce to reach customer satisfaction in the wine sector and answering to our research question "Can E-commerce promote customer satisfaction while purchasing wine online?"

. Through the findings of the study, we can conclude that all three E-commerce variables have a positive impact on E-commerce Customer Satisfaction, none of the independent

variables was rejected. Although none of the research hypothesis were excluded, two of them were particularly low, specifically E-commerce Service Quality and E-commerce Information.

E-commerce benefits is the one representing the higher impact on reaching E-commerce Customer Satisfaction, while purchasing wine online, which is aligned with previous research (Vasic et al. 2019 & Arora and Aggarwal 2018) who studied the perceived benefits of online shopping and Tran (2021) that studied the economic benefits of e-commerce platforms during pandemic times.

Our second variable most valuable was E-commerce Service Quality. Our result is that E-commerce Service Quality does have an impact on Customer Satisfaction, however without a big significance. The acceptance of E-commerce Service Quality as determinant of online Customer Satisfaction is validated by previous studies as (Vasic et al., 2019, Miao et al. 2021, Mason et al., 2015 and Santos 2003). We would like to highlight the study of Vasic et al. (2019), that also accepted the positive impact of Service Quality on online Customer Satisfaction however without a significant score, which corroborates precisely with our results.

E-commerce Information, our third variable also presented a positive impact on Customer Satisfaction while buying wine online, which verifies also in the existing literature (Lin et al., 2011; Miao et al., 2021; Vasic et al., 2019) whose studies investigated the impact of E-commerce information on online Customer Satisfaction, however on their findings were for e-commerce in general, while here we tested those exact variables specifically adapted to wine business.

7.1 Theoretical Implications

The findings of this thesis contribute to increase and develop the existing literature on the topics explored on this study, in the logic of understanding the main drivers of Customer Satisfaction on E-commerce already explored previous studies as (Vasic et al., 2019 and Liuqu et al., 2015).

We took current literature on online Customer Satisfaction and adapted to the wine E-commerce dimension, which is be valuable as it is focused in specific market sector.

Our results also contribute to update and boost the existing literature about the importance of E-commerce for wine companies as previously explored by Fiore (2016) and Casali et al., (2018), adding updated insights about the future of e-commerce and its potential role in the sector.

7.2 Practical Implications

In terms of practical applicability, the present study provides important insights for wine entrepreneurs, firms or other agents in the wine sector to get an idea about the consumers belief´s on wine e-commerce, as our research was conducted after the lockdowns and "post"

pandemic times, we believe that a new consumer was generated during 2020, which provides managers valuable insights about the new consumer and which E-commerce variables are the most valuable for customers in order to reach customer satisfaction while purchasing wine online. The findings are important in the sense that it gathers updated information for managers, allowing them to better predict future trends and behavior on wine e-commerce.

8. Research Limitations

Even though the current study provides useful academic and decision-making insights, some limitations need to be highlighted. For example, the method chosen to collect data, presents some disadvantages, namely, the lack of identity control, time spent and the dedication when answering and the fact that it does not allow to clarify possible doubts.

Lastly, the fact that the questionnaire was developed based on scales of attitudes which measures opinions and levels of agreement/disagreement may also restrict the quality of our responses, as individuals may falsehood their beliefs to put themselves in a politically correctness or positive side.

9. Future Research

Future studies could use previous literature research questions however with updated and more exact results, by exploring a little bit more of the "post" Covid times. Most of previous research as Fiore (2016) that studied "Direct selling in the wine sector", in the region of Apulia in Italy or Palese & Usai, (2018) who investigated the "The relative importance of service quality dimensions in E-commerce experiences", would have achieved scores statistically significant in our days, as better respondents could potentially provide more accurate results. In 2022 most of the participants no matter their age group, would have given better responses and would have been more aware of e-commerce and online shopping comparing to what they were at the time. Consumers due to the pandemic have now a higher degree of digitalization and e-commerce usage generally, which would contribute to more precise and trustful results then those made at the time.

Concerning wine e-commerce, we believe that the role of e-commerce as an important booster of small wine companies in sales and awareness, should be more explored in future studies as (Casali et al., 2018) suggests, big retailers and hypermarkets favor selling and stocking mainly the top-selling brands, at the expense of small and new labels. This sales strategy may damage small wineries and because online is more democrat and egalitarian than physical supermarkets, we believe that the role of E-commerce on increasing sales in small/medium wine companies could be an interesting research question to answer in the future.

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Appendix 1. Questionnaire´s structure

Dimension	Item	Source
E-commerce Information	**Timely Information** Wine e-shops usually provide timely information about prices and promotions	(Walker, 2011)
	Accurate Information Wine e-shops frequently deliver accurate information about the wines (Degree of alcohol, grapes, year, time spent on barrels)	
	Understandable Information During an online wine purchase, I fell that the information about the winery, winemaker or wines are understandable	
	Updated information I feel that wine e-commerce platforms provide updated information to users	
	Credible information Information disposable on wine e-shops looks credible.	
E-commerce Service Quality	**Easy Payment method** I found valuable an easy payment method when purchasing wine online	(Lin & Sun, 2009)
	Customization of bottles and packages I appreciated the ability of customizing wine bottles and packages online	
	Security I feel secure when purchasing wine online	
	Confidence on wine E-commerce service quality delivered I feel confident on purchasing wine through e-commerce platforms, while having a good service quality delivered	
	Wine E-commerce platform functionality The wine e-commerce platforms previously used were intuitive and easy to use.	
	Satisfaction with service delivered	

Customer Satisfaction	I feel satisfied with the service delivered by wine enterprises online.	(Belanche et al., 2012)
	Value added for the consumer Wine e-commerce adds value for the consumer	
	Experience of usage I am pleased with my previous experiences of usage on online wine e-commerce websites.	
	E-commerce Satisfaction I am satisfied with my previous wine purchases through e-commerce platforms.	
	Excellence of resources and functionality I think wine e-commerce platforms provide an excellence of resources and functionality to consumers	
E-commerce Benefits	**Convenience and comfort** Purchasing wine online is comfortable and convenient for consumers	(Delone and Mclean, 2004)
	Real Time wine offers (24/7) Wine e-commerce provide consumers real time offers	
	Opportunity to discover new brands and wine producers (national or international) Online wine platforms provide a huge variety of wines from difference regions and countries.	
	A Vast choice of online wine e-shops with discounts and promotions Online wine platforms offer a vast choice of promotions and discounts	
	Time saving Buying wine online is a good way of saving time	