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**THE MARKET FOR WINE QUALITY
EVALUATION: EVOLUTION AND
FUTURE PERSPECTIVES**

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The market for wine quality evaluation: evolution and future perspectives

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ABSTRACT

Most economic studies on expert wine evaluation focus on this evaluation as a determinant of wine prices, whereas most management research on the topic tackles its impact on the perception of wine quality: wine consumers use expert evaluation as an external quality cue. In the present research, we intend to fill the gap in valuation studies. We propose a first extensive exploration and categorization of five decades of research on wine quality signaling and evaluation through market analysis. We review the emergence and evolution of a consumer-oriented wine evaluation market, providing a critical account of demand, and unveil the market structure and mechanisms. The parallel development of scientific knowledge and technical practices over the last few decades has had a significant impact on wine quality definition and evaluation. It also influenced the way consumers obtain information about wine quality. We provide a historical perspective, exploring the emergence and standardization of wine quality evaluation and identifying the 1970s as the turning point from a production-driven market to a consumer-oriented one. Important changes are afoot on the market for wine evaluation: in areas traditionally set aside for experts, the roles of social media and experts have evolved meaningfully over the past decade with the growing self-confidence and self-reliance of wine consumers and the disappearance of the demarcation between marketplace and prescription.

JEL Classification : D11, D47, D81, D82, D83, D91, E21, L1, L15, L66, L81, L84, M31, N30, N50

Keywords: Quality evaluation, Quality perception, Wine experts, Prescription, Digital transformation

1. Introduction

1.1 Information economics in markets under uncertain product quality

Stigler (1961), in his seminal paper *The economics of information*, proposed an information economics model of search behavior among imperfectly informed consumers. The information economics approach assumes the full rationality of individuals and considers suboptimalities caused by asymmetric information and information overload (Festré & Garrouste, 2015). The market is the analytical starting point, and quality uncertainty challenges competition mechanisms, up to the very existence of markets themselves. Nelson (1970) and Darby & Karni (1973) completed this model by developing a typology of goods according to the available information. They developed the concept of search goods, for which quality information is available prior to purchase, experience goods, for which consumers can acquire quality information through purchase and consumption, and credence goods, for which quality information can be acquired even after purchase and consumption. Their research echoes the development by Akerlof (1970) of the concept of asymmetrical information in the theory of markets; this asymmetry appears in exchanges under uncertain situations when buyers have access to limited information about the quality of their prospective purchase. Information asymmetry may encourage dishonesty among sellers, though this dishonesty may lead to market destruction by driving good-quality products out. In markets where quality is remarkably difficult to define, applying the recommendation of providing consumers with more information (Yuan et al., 2019) will not be sufficient to reduce information asymmetry, for consumers might not feel confident about using the information to evaluate quality (Moussa & Touzani, 2008). These authors stress the fact that recommendations from third parties will play a greater role in the structure of the market for consumer goods responding to experience characteristics.

1.2 Evaluation systems and the role of market intermediaries

Since the seminal work of Dewey (1918) on the theory of valuation, the concept of evaluation has appeared in a number of studies (Anna Guidry et al., 2009; Ashton, 2017; D'Alessandro & Pecotich, 2013; Gawel & Godden, 2008; Lesschaeve, 2007), but it has seldom been defined in the market context. According to Kwon & Easton (2010, p. 123), "Evaluation is usually an internalized process that is intrinsic to the activities of market actors. Producers evaluate what goods to produce, intermediaries such as distributors and retailers evaluate what goods to promote and stock, while consumers evaluate what goods to buy. In some cases, however, a secondary evaluation market controlled by an external evaluator can emerge as a de-facto

gatekeeper exerting a powerful influence over the activities of market actors in the primary market.” In their paper on the power of market intermediaries, Bessy & Chauvin (2013) distinguish, alongside the traditionally acknowledged figure of the auctioneer, four main types of intermediaries: distributors, matchmakers, consultants, and evaluators. Beyond these intermediaries’ specific functions, Bessy and Chauvin study their participation in the construction, maintenance, or expansion of a market.

1.3 Study context: the specific case of information economics in the wine market

Wine is a particular kind of sensory-based experience good: before drinking it, one cannot assess its quality, nor know whether one will like it or not (Cardebat, 2017). Therefore, quality evaluations prior to consumption rely mainly on extrinsic quality cues (Lockshin et al., 2001). Academics’ uncertainty about the nature of product quality has led researchers to focus rather on perceived quality (Charters & Pettigrew, 2007). For decades, researchers have conducted in-depth studies on the variety of quality signs and their use by wine drinkers (Teil, 2010). Even after tasting a wine, one might know if one likes it or not, but still feel unable to appraise its quality. Wine consumers’ willingness to pay mainly depends on quality assessment, this information thus being of great importance to the whole economic system and its stakeholders. (Veale & Quester, 2008). Numerous studies have examined the impact of the degree of expertise in the quality evaluation process as regards information asymmetry (for a review see D’Alessandro & Pecotich, 2013). Compés-López et al. (2018) suggest that an industry of information and specialized valuation has emerged in the major wine markets.

1.4 Quality conceptualization, definition, detection and evaluation in the wine market

Quality is a strategic business variable (Oude Ophuis & Van Trijp, 1995) whose conceptualization and precise definition is unanimously recognized by consumer economists and marketing scholars as being a complex task, since it is multidimensional and reflects competing views (Carsky et al., 1998; Charters & Pettigrew, 2006; Garvin, 1984; Oczkowski & Pawsey, 2019; Steenkamp, 1990). This is especially true for wine (Charters & Pettigrew, 2007; Verdú Jover et al., 2004) as the market is one of the most fragmented (Charters & Pettigrew, 2007) and the product category displays a unique range and hierarchy of quality (Peynaud & Blouin, 1996). A gap has been identified between producer-defined quality and consumer-based quality perception (Oude Ophuis & Van Trijp, 1995), often pitting the notions of objective and subjective - or perceived - quality against each other (Carsky et al., 1998). The interest in objective quality stems primarily from production management issues such as quality control, whereas subjective quality is mainly consumer-focused (Charters & Pettigrew, 2007),

so even within organizations, different departments (e.g. production and marketing) may tackle quality from different perspectives (Oude Ophuis & Van Trijp, 1995).

Objective quality responds to measurement requirements (quantitative) and verifiable superiority based on predetermined standards (Steenkamp, 1990; Zeithaml, 1988). Objective wine quality is influenced by weather conditions (Ashenfelter et al., 1995), technological choices and the nature of the soil (Brunel et al., 2016). Following the work of Ashenfelter et al. (1995), Brunel et al. (2016) in *Quantitative ranking evaluation of wine quality* developed a model of objective quality measurement based on minimum and maximum temperatures, rainfall, water loss and sunshine intensity. Objective (lab) psychochemical measurement of wine quality, as a response to the more established sensory (human) evaluation, has been recently developed to predict wine quality (Charters & Pettigrew, 2006). The quantitative approach to objective quality enables wine quality predictions, for example, through machine learning techniques, linear regression, neural networks and support vector machines to determine quality dependency on 11 psychochemical characteristics, including volatile acidity, residual sugar, pH and alcohol (Gupta, 2018). Quality detection has recently been supported by technological tools such as paper-based potentiometric electronic tongues fitted with sensors able to discriminate between samples according to grape variety and to detect substances added during the production process (Nery & Kubota, 2016). Similarly, the electronic nose based on thin film semiconductor sensors outperforms trained human panels (sensory evaluation) in detecting and discriminating between aromatic compounds, with greater accuracy at concentrations 10 times lower (Santos et al., 2010). Despite advances in instrumentation and methodology, wine quality assessment remains very difficult through analytical measurement, as there is still a need to find ways to relate and better understand the relationships between physicochemical and sensory analyses and, ultimately, consumer preferences (Ebeler, 1999; Gupta, 2018).

According to Horowitz & Lockshin (2002), the first-time purchase of a specific wine often gives rise to uncertain expectations as to its quality. And when confronted with uncertainty about product quality, consumers often use multiple product quality cues as substitutes to assess this quality (Hjorth-Andersen, 1991; Narwal & Nayak, 2020). Quality perception is a core concept in building customer value and satisfaction (Oude Ophuis & Van Trijp, 1995). In the case of wine, it is closely related to pleasure (Charters & Pettigrew, 2003): “Perceived product quality is an idiosyncratic value judgment with respect to the fitness for consumption which is based upon the conscious and/or unconscious processing of quality cues

in relation to relevant quality attributes within the context of significant personal and situational variables.” (Steenkamp, 1990, p. 317). The paradigm of perceived quality has dominated the perspective of consumer economists and marketing academics for decades (Charters & Pettigrew, 2006). The quality dimensions of wine are described in Table 1 below.

Table 1: Quality dimensions of wine - adapted from Oude Ophuis & Van Trijp (1995), Müller (2004) and Ashton (2014)

	Social	Technical	Sensory	
Type	Search	Credence (Cognitive)	Experiential	Credence
Defined by	<i>Nelson (1970)</i>	<i>Darbi & Karni (1973)</i>	<i>Nelson (1970)</i>	<i>Darbi & Karni (1973)</i>
Quality cues	Extrinsic Reputation of producer or origin (collective reputation)	Extrinsic Varietal(s), vine growing techniques, maturity, winemaking choices, price, brand name, vintage	Intrinsic Organoleptic characteristics – Age, appearance, color, shape of the bottle, size, structure	
Quality attributes	Awards, ratings, rankings, distribution channel	Healthfulness, naturalness, environmental friendliness, wholesomeness, exclusiveness, way of production	Taste, freshness, convenience, drinkability, balance, complexity	
Evaluation before purchase	Possible	Difficult or impossible	Impossible except prior knowledge	
Evaluation after purchase	Possible	Difficult or impossible	Possible when mature	Difficult to assess upon early consumption for aging wines

Consumers’ conceptualization of quality depends on their involvement: the higher their involvement the higher the tendency towards objective quality (Charters & Pettigrew, 2006). The experience and expertise required to recognize and determine quality (Cardebat et al., 2014; Oude Ophuis & Van Trijp, 1995) are based on the expectations of certain factors (Horowitz & Lockshin, 2002). Critics’ judgments are accepted as legitimate proxies for unobservable product quality; their ratings are closely monitored by distributors, retailers and customers, as well as by producers (Hsu et al., 2012).

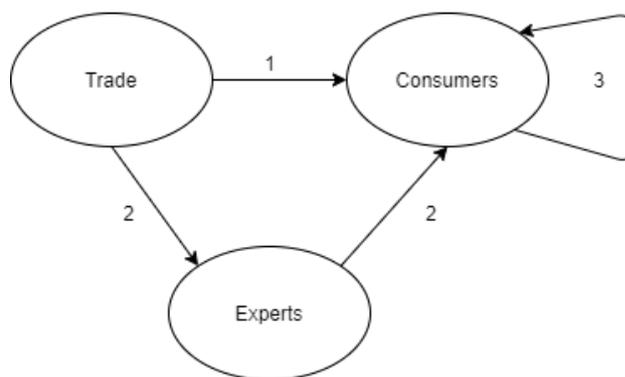
1.5 Understanding the emergence of a quality evaluation market

Various papers suggest the existence or the emergence of a wine evaluation market, at the crossroads between wine seller, wine buyer and wine prescriber (Barbe & Durrieu, 2005; Compés-López et al., 2018; Stenger, 2017), but fail to date it or to describe its mechanisms in wine economics. A study of the wine evaluation business has yet to be undertaken, not to itemize its moderate financial mechanisms, but to better determine its place and the central role it plays in product promotion and value creation (Olivesi, 2016). In line with Ashenfelter & Jones (2013), we seek to explore the exact nature of demand for expert opinion. Does this

demand stem, as evidence would suggest, solely from wine consumers, or would a study of such demand unveil more complex mechanisms? Most economic studies focus on the impact of expert evaluation as a determinant of wine prices, whereas most management research tackles its impact on perception of wine quality, with expert evaluation being used by wine consumers as an external quality cue. In the present research, we intend to fill the gap in valuation studies by investigating an underexplored aspect of the topic through a discussion of previous research.

We propose a first extensive exploration and categorization of the literature on wine evaluation through an analysis of the evaluation market, determining supply, demand and market mechanisms, as well as current evolutions and perspectives.

Figure 1: Quality information flow in the wine industry



1.6 Research question

This paper seeks to address the following question:

How has the wine evaluation market evolved since its emergence and is there a future for professional wine evaluation, or has it come to an end?

The parallel development of scientific knowledge and technical practices in recent decades has had a significant impact on the definition and evaluation of wine quality. It also influenced the way consumers obtain information about wine quality. The endeavor of this paper is to assess five decades of research on the economics of quality signaling and wine evaluation. We start by providing a brief historical perspective, exploring the genesis of wine quality evaluation and signaling, before reviewing the emergence and evolution of the consumer-oriented wine evaluation market, providing a critical account of supply and demand, and unveiling the market structure and mechanisms. We stress the importance of consumer judgment delegation and other stakeholders' needs on the evolution of the wine evaluation market. The last part of this

paper is dedicated to more recent market evolutions and future perspectives for quality evaluation and judgment delegation.

2. The economics of quality evaluation: evidence from the wine industry

2.1 Genesis of wine quality signaling

Prior to the twentieth century, the wine consumer was often also the producer (Amerine et al., 1959) and only fine wines were worth the expense of transporting them. It was only with the extension of the railroad and increasing demand from urban areas that consumption spread beyond traditional wine-producing regions (Colman, 2008). In his study of the British wine market between 1860 and 1914, Simpson (2004) reminds us that in early nineteenth-century Britain, wine was still considered a luxury product. It was a sophisticated drink enjoyed only by those who possessed the social and cultural capital to appreciate it (Cawley, 2018). Markets were driven by large internal (mostly local) demand (Morrison & Rabellotti, 2017): in 1900, Europe still accounted for more than 88% of global wine production and less than 7% of it was sold outside national borders (Anderson et al., 2017). Still, winemakers were often farmers (Cawley, 2018) who suffered significant productivity and quality variations from year to year, making it difficult for retailers to source quality wines (Conca Messina et al., 2019). Merchants tasted wines mostly to detect flaws (Simpson, 2004) such as off-odors - less elusive and easier to identify and control than positive quality factors (Jackson, 2017) - and consumers relied on the judgment of their wine merchants to avoid fraud and adulterated wines (Shapin, 2012). The question was more “is it drinkable?” than “how good is it?”. Globally, quality control was left in the hands of traders and retailers rather than in those of producers (Shapin, 2012). There was still a limited direct relationship between winemakers and consumers (Cawley, 2018) and information asymmetry prevailed on the wine market.

2.2 Foundation of sensory evaluation as a science

2.2.1 Standardization of food and beverage quality evaluation

The development of both government- and industry-developed standards after the Second World War (Carsky et al., 1998) led to the foundation of the International Standards Organization (ISO) in 1947. In the middle of the twentieth century, industrialization brought scientific and technical changes, along with an increase of the competitiveness and internationalization of the food and beverage industry (Stone & Sidel, 2003). It fostered the development of sensory science based on standardized sensory evaluation techniques as a systematic way of understanding human sensory perception of foods and beverages (Lahne,

2016). The earliest practitioners of descriptive analysis (brewmasters, perfumers, and other product specialists) started to develop descriptive analysis using a quantitative methodology (Stone & Sidel, 2003). The 1970s saw the definition of the first standardized terms relating to sensory analysis of food in the framework of *ISO 3972-1979 Sensory analysis - determination of sensitivity of taste* and *ISO 5492-1977 Sensory analysis - vocabulary* (Drake et al., 2009) to allow taster alignment on a shared terminology. Carsky et al. (1998), in *The evolution of quality in consumer goods*, noted that product standardization, government legislation, improvements in the manufacturing processes, and product testing organizations led to an increasing level of substantive quality in consumer goods. Increase culminating in the 1970s with a drop in the rate of “not acceptable” consumer goods in *Consumer Reports* from 12% in 1962 to 2.9% in 1970. These authors identify the 1970s as the turning point from a production-driven to a consumer-oriented market.

2.2.2 First attempt to standardize wine quality evaluation

After the Second World War, organic chemistry scientists started to focus on the goodness of wine (Shapin, 2012) and analyzed the tasting methods used by merchants to develop a norm and training methods for wine tasting (Fernandez, 2004). Amerine’s eponymous wine rating system was created at UC (University of California) Davis in 1959, during the infancy of the region’s wine industry. “With the growing consumption of wine in this country and the rapidly developing interest of the general public in wine appreciation, maintenance of uniform quality and improvement in quality have become matters of increasing importance to California wine makers.” (Amerine et al., 1959, p. 477). At that time, the United States produced and consumed less than 3% of global world wine (Anderson et al., 2017). Amerine’s concept was to evaluate sensory impressions of wine by assigning a weighted numerical value to its different sensorial components according to their relative importance (appearance, color, aroma and bouquet, acetic acid, total acidity, sweetness, body, flavor, bitterness and astringency, general quality), for a total score of 20. Its creation lent credence to the possibility of assessing all types of wine in relation to the same numerical system (Hommerberg, 2011), in an attempt to standardize and objectify general quality assessment: “Davis 20-point scorecard was designed to stimulate the production of quality wine and to provide the standards by which quality wines could be recognized and identified by winemakers and wine judges.” (Langstaff, 2010, p. 242). The creation of standardized tools for sensory evaluation, and especially the wine tasting glass based on the international standard *ISO 3591:1977 Sensory analysis — Apparatus — Wine-tasting glass*, has also been key in allowing a globalization of wine sensory evaluation. One of the ways

in which scientists confirm the validity of their conclusions is by repeating the research that produced it (National Academies of Sciences, Engineering, and Medicine, 2019), hence the importance of creating a common tool allowing the replicability of sensory analysis.

2.3 Emergence of the wine evaluation market: the turning point of the 1970s

2.3.1 *First consumer-oriented wine publications*

According to the semantic works of Nelson (1970) and Shapiro (1983), the limitation of consumer information about quality, also known as information asymmetry, has profound effects on the market structure of consumer goods. The key economic issue for wine consumers is quality uncertainty before consumption (Cardebat & Paroissien, 2015). This implies that only the winemakers are fully aware of the real quality of the wines they produced and they set their prices with this product quality evaluation in mind (Hsu & Podolny, 2005). Aside from general terms used to describe the wine itself (oaked, carbonic-macerated, etc.), most information about the winemaking process and oenological practices is not communicated (Parga-Dans & Alonso González, 2017). Accordingly, other stakeholders cannot observe or assess its quality except by drinking it (Spence & Wang, 2019). Alternatively to relying on quality signaling, they can delegate their judgment by trusting the guarantees offered by professionals (Camacho et al., 2014). Even when they are provided with further information, prospective buyers might not know how to process the information to develop a quality appreciation of the product (Müller, 2004; Grunert, 2005).

At a time when most of the population had very limited knowledge of wine (Cawley, 2018), most books about wine were aimed at professionals, tackling viticulture and oenology (Shapin, 2012), vineyards, regions, and how to serve and drink wine (Fernandez, 2004). Wine quality was traditionally defined only by wine professionals from the trade, through a professional perspective (Sáenz-Navajas et al., 2013). In the 1970s in France, the first published purchasing guides were mainly based on the awards received at agricultural shows, such as the Concours General Agricole de Paris, and not on the personal taste of the critic or writer: it was a compilation of awards with no rating or personal involvement from the editor (Fernandez, 2004). A shift occurred in January 1973 when Henri Gault and Christian Millau, two famous gastronomy journalists - not members of the wine trade – trod the path of the consumer advocate. They conducted a tasting, and published the first review based primarily on their own taste, and how much they enjoyed the wine. This pioneer tasting report on 200 wines was the first of its kind, purposefully written with no specific technique or methodology, just as a normal consumer would comment on wines. Their very successful publication was one of the

first attempts to start tasting, comparing and classifying the wines and thus to define quality from a consumer-oriented perspective. A new generation of educated consumers and consumer-centric product judgment emerged worldwide (Carsky et al., 1998)

Prior to the 1970s there were no widely circulated magazines offering consumer ratings of wine that would allow consumers to compare relative quality in a specific type of wine (James, 2018). Referring to that period, the British wine critic Jancis Robinson wrote in a column published on September 4th, 2015: “Back in those days, wine used to be one of those subjects about which ordinary people in anglophone countries would hesitate to express an opinion. It used to be left to us experts to tell ordinary tasters what to think and how to describe those thoughts.”¹ In the 1970s, a decline in consumption in the traditional producing countries and a steady increase in demand in non-producing countries (Morrison & Rabellotti, 2017), along with a shift upmarket in consumption (Wittwer et al., 2003) and the introduction of the Anglo-Saxon tradition of wine tasting and criticism in the 1970s (Fernandez, 2004), represented a major turning point for the world wine industry. In the United Kingdom, consumer-oriented wine publications began to emerge, such as *Vine* and *Decanter* in 1975 (Shapin, 2012). This evolution boosted social demand for wine quality assessment and purchasing recommendations among consumers, who wanted to drink high-quality products (Jackson, 2017).

The combined emergence of Californian wine publications, of cheaper flights to Europe (James, 2018) and the impact of the famous comparative blind tasting between Californian and French wines organized by Steven Spurrier in 1976 (Morrison & Rabellotti, 2017) triggered an interest in wine in the United States. California and the United States gained both wine-making legitimacy and an international reputation, at once raising awareness of American wine and elevating patriotism (Shapin, 2012). *Wine Spectator* was launched that same year, *Food & Wine* and *Wine Advocate* two years later, and *Wine Enthusiast* in 1979, reflecting the rapid increase in demand for wine experts’ opinions in the United States (Storchmann, 2012): “Around this interest grew the need for describing wines so as to guide consumers in their choice, giving rise to professional wine critics and educators.” (James, 2018, p. 3).

“The emergence of the modern wine critic followed the rise of the United States as a serious wine consuming country in the early 1960s and then as a serious wine producing country by the late 1970s. U.S. wine markets lacked the historical and institutional support to offer much guidance to the new consumers who were trying to address the problem of hidden quality

¹ <https://www.ft.com/content/9de45762-5230-11e5-b029-b9d50a74fd14>

information. They concomitantly lacked the ability to provide guidance to the many new producers vying to compete and set prices based on product quality.” (Hsu et al., 2007, p. 11). Traditional European wine-producing countries very early made institutionalized attempts to cope with information asymmetry by developing strongly regulated industries, instigating education, and setting up cooperation systems, exhibitions and experimentation centers at national level (Conca Messina et al., 2019). Their intention was to provide accurate quality information to consumers through the creation of institutionalized quality signaling systems defining and signaling quality for a given region: geographical indications and quality certification labels (Castillo-Valero & García-Cortijo, 2015; Costanigro et al., 2019). But the interpretation of these quality signals by consumers is still imperfect overall, as infrastructure, certification systems and legal requirements differ among countries.

2.3.2 Evaluative innovation: The development of consumer-oriented wine quality scales

“The real innovation is often one of format and presentation rather than a methodology that allows for evaluations that are more intelligible, decisive and critical. This is frequently done by supplementing or replacing qualitative descriptors with numerical ratings.” (Kwon & Easton, 2010, p. 132). At the end of the 1970s, at a time when most ratings were using the star system inspired by the Michelin’s Guide award of a quality symbol (Shapin, 2012), Robert M. Parker Jr. (hereinafter, Robert Parker) was among the first wine critics to assign a numerical score to wines. His performative evaluation of wine quality on a 100-point scale - copied from the American educational grading system –aimed to provide the uninitiated with a way to distinguish one bottle of wine from another, with an assessment allowing consumers to compare the real worth of the product in relation to other products other than by price (Shapin, 2016). This kind of scoring system for wine is understandable whatever the spoken language, and became the first truly international evaluation system for consumers: no wine vocabulary or education is needed to understand instantly and intuitively the standardized and identifiable rating, from 50 to 100 (Smith, 2019). It is also easier for wine retailers to display numbers (between 90 and 100) than exhaustive wine descriptions in their shops and online. The points scoring system was rapidly adopted, first by competing American publications such as *Wine Spectator* - in 1980 - and then worldwide by most influential wine critics, becoming a global norm in the wine industry to the present day (Shapin, 2012).

In Europe, the use of the word “appellation” for a wine region acknowledges this region as a unique terroir, and the regulations governing the grapes grown and winemaking methods employed aim at protecting the quality and brand equity that the region and its producers have

achieved over time. Meanwhile, the American counterpart, the AVA (American Viticultural Area), is merely geographical (Atkin & Johnson, 2010). The absence of a homogenized institutional quality signaling system at a global level, and the high complexity and heterogeneity of the existing systems, can be perceived as confusing by consumers, who may look for alternative sources of quality information (Malorgio et al., 2007). This finding is corroborated by Müller (2004) in her study on German wine laws, and by Cardebat & Figuet (2009) who recommend abandoning the French AOC (Appellation d'Origine Contrôlée) classification system.

2.3.3 Global impact on the wine industry

The increased globalization of markets has gone hand in hand with increased demand for fine wines on new markets and a maturation of the traditional ones, as well as demand from less educated wine drinkers, who at global level rely more heavily on wine critics for their wine selection and taste formation (Gibbs et al., 2009; Morrison & Rabellotti, 2017). As many wine consumers consider that they lack both knowledge and the ability to make an accurate sensory evaluation of wine (Crouch and Quester, 2008), they tend to rely on experts' advice for their wine selection: "Analytical language can help repair that lack of familiarity, just as it can signal objectivity by linking analytic descriptions to expertly established real properties of wine as an object." (Shapin, 2016, p. 453). Consumers' lack of knowledge could lead winemakers to invest in communication and advertisement rather than in quality, and only the existence of experts can form a barrier against this trend (Gergaud & Vignes, 2000). "'Confusion marketing' (Wells, 2003) is a term used to describe the situation where wide-scale adoption of marketing techniques results in products becoming so complex/similar they confuse the consumer, making it difficult to compare products or identify those offering best value. While it is unlikely to be a planned effect within the wine industry, it may be an inadvertent consequence of marketing activity. For example, wine marketers promote an extensive range of geographical regions, districts, zones and individual wine estates (and therefore production methods)." (Drummond & Rule, 2005, p. 56). Two-thirds of wine sales in France take place in supermarkets (Giraud-Héraud & Surry, 2001). Supermarkets are not usually where one will find advice from a clerk. For this reason, vineyard managers have to find other ways to communicate about the quality of their wines (Müller et al., 2010). One option is to highlight positive reviews from wine critics or awards won in competitions. On the consumer side, this decision-making support comes at a cost, because award-winning wines often command price premiums (Schiefer & Fischer, 2008)

The evaluative innovation of the 1970s marked a shift toward an increasingly globalized, less technical and more pleasure-oriented way of speaking about wine in Anglophone settings, especially the United States (Shapin, 2012). Jackson (2008) also notes that evaluative innovation and academic research impacted both consumption and production during the second half of the twentieth century, as it resulted in a marked improvement in wine quality and brought fine-quality wines to more consumers than ever before. As the *New York Times* noted in 2016, “America’s lusty embrace of pricier wines sold in 750-milliliter bottles did not start until about 1980, those same experts say. Mr. Parker and Mr. Shanken² both rode and drove that trend. Today, those in the wine industry — wine makers, wine merchants, wine writers and other self-described ‘cork dorks’ — say the United States is in the midst of a golden age of wine, in no small part because of the Parker scoring system.”³ Information about wine quality and quality evaluation has played a major role in current consumption trends: “In many respects, the resurgence of the U.S. wine industry was predicated upon the existence of a critic-generated classification system that helped new consumers navigate the complexities of products and ‘appreciate’ wine.” (Jamerson, 2009, p. 385). The democratization of wine purchases and consumption in the 1970s (Jenster & Jenster, 1993) and the transformation of the wine industry from a production-oriented to a market-driven industry increased consumers’ dependency on analytical sensory evaluation techniques (Langstaff, 2010). This is consistent with the conclusions of Gibbs et al. (2009): that an increasing fraction of naive consumers was responsible for the increasing influence of expert wine reviews.

3. State of the market for expert opinion on wine and valuation market mechanisms

3.1 Professional opinion-selling and performative valuing perspectives

We propose a segmentation of wine experts inspired by the work of Cardebat (2017). The term “wine experts” here does not include producers (viticulturists, winemakers, chemists, and oenologists) or the industry professionals directly and solely involved in the selling process (merchants, marketers, buyers), and will focus on third parties offering recommendations. To the experts mentioned in Cardebat’s study (2017), we will add sommeliers and wine clerks, for they create value and reduce information asymmetry by transmitting wine knowledge and

² Editor and publisher of *Wine Spectator*

³ <https://www.nytimes.com/2006/08/13/business/worldbusiness/13iht-wines.2466146.html> (consulted June 2020)

facilitating consumer decisions (Ben Dewald, 2008), while offering the advantage of clarification and feedback opportunities (Chaney, 2001).

Table 2: Segmentation of wine experts, inspired by the work of Cardebat (2017) and Mellet et al. (2014)

Expert	Profile	Examples	Channel	Typology	Perspective
Stars	Capitalize on their name	Robert Parker, Antonio Galloni, Jancis Robinson, Tim Atkin, Liz Palmer	On & Offline	Selection & Reviewer's singularity	Decline
Sommeliers & wine clerks	Wine sensory evaluation & service training	Marc Almert, Aldo Sohm, Paolo Basso, Arvid Rosengren	On & Offline	Selection & Reviewer's singularity	Slow expansion
Magazines	Wine journalists & critics	Wine Enthusiast, Wine Spectator, Decanter, Wine & Spirits, Revue du Vin de France	On & Offline	Selection & editorial elitism	Expansion for lifestyles
Printed & Online Guides	Wine journalists & critics	Bettane & Dessauve, Robert Parker, Hugh Johnson	On & Offline	Selection & editorial elitism	Decline
Competitions	Professional or amateurs tasting panel judges	Decanter World Wine Awards, International Wine Challenge, International Wine & Spirit Competition, Concours Mondial de Bruxelles	Offline	Inclusion & egalitarianism	Decline
Bloggers & Instagramers	Aficionados	Julien Miquel, Kelly Mitchell, Joe Menezes, The Wine Wankers Jon Thorsen, Carolyn Evans Hammond, Luiz Alberto	Online	Selection & Reviewer's singularity	Slow expansion
Wine lovers with apps	Aficionados & Amateurs	Vivino, Delectable, Wine Advisor, Cellar Tracker, Wine Searcher	Online	Inclusion & Algorithmic egalitarianism (<i>synthesis of the rating</i>)	Rise

3.2 Evaluative system and methodology for producing evaluative reviews

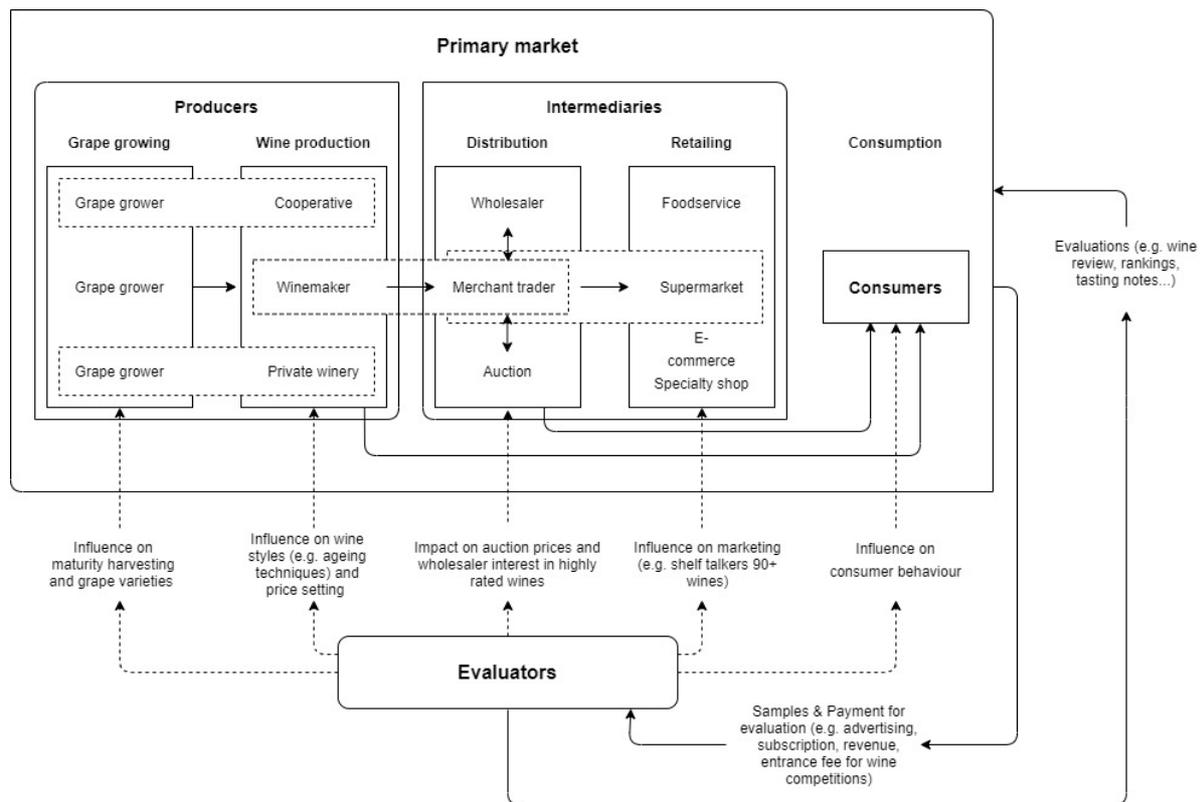
Wine evaluators have evolved markedly over the last century; from wine merchants directly involved in the sale of products they rate, to independent third parties performing a hedonic judgment on behalf of consumers (Ares & Varela, 2017). Wine differs from other goods in that its consumption requires a commentary (Coutier, 2002). Wine experts can use their prescription power to draw attention to a region (vintage charts) or a specific wine of a specific vintage, but they mainly judge the quality of fine wines (Paroissien, 2017). While fine wine sales constitute only a small fraction of the global wine market, their influence on the direction of enological and viticultural research is of major importance (Jackson, 2017). Wine critics play a crucial role in the information mechanisms of the wine market by providing complementary information based on their sensory experience (Tempere et al., 2019), with a clear consumption orientation (Hatchuel, 1995). The wine critic's role is to help wine consumers understand wine better and appreciate it more by shedding light on both perception and interpretation (Peynaud & Blouin, 1996). Hundreds of thousands of wines reinitiate the work of wine critics in each new vintage,

making their wine evaluation activity particularly intense (Teil, 2001). Professional wine experts can either draw attention to new producers (Coslor, 2016) or work as a choice facilitator by broadening or reducing the possible choices of their readers (Stenger, 2008). Wine critics' professional status derives from both their sensory and cognitive expertise (Sauvageot et al., 2006). But, according to the literature, wine expertise relies more on explicit knowledge about wine than on superior sensory abilities (Hughson & Boakes, 2002). While opinion leaders are traditionally difficult to identify, expert tasters identify themselves through their public roles (Edwards & Mort, 1991). Since the 1970s, wine experts have genuinely professionalized their critical activity by using a rationalized vocabulary that is normative and communicable (Burnham & Skilleas, 2012) to classify aroma and taste (Carlsen & Charters, 2006) and to evoke olfactory imagery (Tempere et al., 2014). Since the creation of the aroma wine wheel by Ann Noble in 1984, most aromas in wine are described by analogy with fruits, berries, flowers, herbs and spices (James, 2018; Langstaff, 2010). It has been suggested that product categories in which pleasure or satisfaction is derived from product usage are more likely to produce opinion leaders (Feick & Price, 1987).

3.3 Market structure and interaction with wine value chain

The existence of an evaluator market, where evaluators produce and sell quality evaluations for goods or services that are traded in the primary market to consumers of both this evaluation and the goods or services, increases the efficiency of the primary market (Kwon & Easton, 2010; Odorici & Corrado, 2004) up to the point where its efficiency becomes dependent on the accuracy of the quality signals available to consumers (Paroissien, 2017). In contrast to Benghozi & Paris (2003), we consider that prescription is not limited to a purely informative function; in figure 2 we develop its link to the wine market value chain.

Figure 2: Wine evaluation market value chain, adapted from Kwon & Easton (2010) and Goncharuk (2017)



4. Multiplicity and complexity of demand for wine quality evaluation

4.1 From wine consumers: to cope with information asymmetry and consumer confusion

“The world wine market is a complex arena with tens of thousands of producers, hundreds of different grape wine varieties with which to make wine and many thousands of brands to tempt existing and potential consumers” (Johnson et al., 2017, p. 1). The changes in the geography of production, consumption and trade, with the increase in the number of wineries and brands in recent decades, have generated demand among consumers for quality information (Compés-López et al., 2018). The consumption slowdown in traditional European producing countries since the 1960s has gone hand in hand with a shift upmarket and increasing demand for information about wine, especially the quality of fine wines (Sulkunen, 1989). Parga-Dans & Alonso González (2017) consider that the “quality-turn” trend, far from clarifying the criteria used to evaluate the quality of food, has resulted in a proliferation of differentiated products, market segmentation and a complexification of the decision-making act among consumers intimidated by choice. According to Bond-Mendel & Simintiras (1995, p. 14) “Risk has long been seen as a determining factor in whether a consumer does or does not purchase a good or service and information as a main reducer in the importance of perceived risk”.

Most of the world's wine consumers consider wine buying as a risky activity due to a high level of confusion stemming from the complexity of the market (Atkin & Johnson, 2010). A solution to cope with this confusion is for consumers to turn to better informed agents to make their decision (Drummond & Rule, 2005), as these third parties offer homogenous information based on a single and comparable rating scale between wines (Smith, 2019). "The assignment of individual products to aggregate categories stimulates the formation of generic frames of comparability within which producers design their competitive strategy, and consumers express their preferences." (Odorici & Corrado, 2004, p. 149). In the case of wine experts, both the prescriber and the consumer supposedly have the same interest: that of the buyer (Hatchuel, 1995). Wine experts adapt to the uneven wine market (evolution over time, emergence, disappearance of references) and, like the market, are constantly moving with vintage releases when they publish guides or tasting notes every year. Some wine critics claim to taste more than a hundred different wines a day. Anyone who is not professionally dedicated would be unable to do so, be it for financial reasons (cost of purchasing the samples) or simply for lack of time to dedicate to this activity. Nevertheless, the accuracy of wine experts' judgment has been discussed, particularly by Ashenfelter & Jones (2013, p. 1): "the expert opinions are not efficient, in the sense that they can be easily improved, and that these opinions must be demanded, at least in part, for some purpose other than their accuracy." Their existence on the market may therefore be necessary for stakeholders other than just wine consumers.

4.2 Interdependence with consumers: readership and impact on demand

According to Amerine et al. (1959), the length of the history of quality evaluation for wine bears no comparison with that of any other food product. Still, in 1989, Spawton qualified wine journalism as a niche market, targeting only 6% of wine drinkers. On the wine market, the core of wine critics' activity remains the publication of wine reviews and consumer guides: their opinion is their living (Fernandez, 2004). The main source of revenue of wine critics and magazines is circulation and advertising revenue as well as subscriptions to access their ratings. Their activity remains dependent on the world and wine economies, while they build an ostentatious neutrality without which the very legitimacy of critical expression would be mortgaged (Olivesi, 2016). The example of the United States is emblematic: The wine market in the US is now considered to be a mature market, with estimated sales revenue reaching \$40 billion in 2014. Thach & Olsen (2015) report that 40% of the 230 million adults in the United States drink wine and 33% of them consume wine more than once a week. The market counts more than 15,000 different wine references available to consumers (Humphreys & Carpenter,

2018). According to Storchmann (2012, p. 22), “The market for expert opinion on wine is large. The seven major U.S. wine magazines have a combined subscribership of more than 500,000, with 350,000 alone for the Wine Spectator; wine magazine sales total more than \$25 million”. Wine magazine sales thus account for slightly more than 0.06% of the primary market. Ten years later, most of the wine publications mentioned by Storchmann in 2012 (data from 2010) have increased their readership base and the three major U.S wine magazines (Wine Spectator, Wine Enthusiast and Wine & Spirits) have a combined subscribership of more than 750,000, with 389,000 alone for the Wine Spectator (Kantar, 2020). Still, researchers outline the difficulty of determining the area of influence beyond publications and subscribers, as well as the scarce availability of figures on publications and sales of magazines and guides dedicated to wine (Olivesi, 2018). As suggested by their instrumentation in numerous scholarly studies, wine publications have a place and a role that go beyond mere financial mechanisms: “Wine Spectator indices have been used in studies by Landon and Smith (1997, 1998), Schamel (2000), Benfratello, Piacenza, and Sacchetto (2004), Haeger and Storchmann (2006), Costanigro, McCluskey, and Mittelhammer (2007), Roberts and Reagans (2007) and San Martin, Troncoso, and Brummer (2008) to name a few. These studies uniformly support the hypothesis that the relationship between the price of wine and quality as judged by leading wine critics is statistically significant and consistently positive.” (Bicknell & MacDonald, 2012, p. 173). While the market for wine books and magazines is only a limited business, the wine evaluation market including guides, wine fairs, websites, numerous tastings, meetings, exchanges, and promotional activities with winemakers, experts, distributors and consumers, mobilize significant resources and capture a share of the revenue generated by the wine market (Fernandez, 2004).

4.3 From fine wine investors to collectors

Wine investment is usually more hedonistic and emotional than purely speculative (Aytaç et al., 2018), unlike that in other collectibles, such as artworks (Burton & Jacobsen, 1999), the difference being that its primary destination is consumption (Ashenfelter & Jones, 2013). Its relatively low correlation with standard financial assets responds to the need for portfolio diversification (Masset & Henderson, 2010) but, conversely to stock or bonds, wines do not enable the investor to receive any dividend (Burton & Jacobsen, 1999). As Coslor & Spaenjers (2013) demonstrated for artworks, demand for market information can also be driven by a growing movement to establish a product as a financial investment category that should comply with financial market norms and with the demand for transparency and accountability from

investors. More globally, wine critics' scores have opened up the market for Bordeaux fine wines to speculators, as professional wine experts work as proxies for notation agencies (Masset & Weisskopf, 2018). "In 2006, the LivEx 100, which is composed of 100 top-ranked wines and is 91 per cent weighted to Bordeaux, was added to Bloomberg's list of financial indices. The Liv-Ex, which only includes wines that are ranked at 95 points or better, is effectively benchmarked using Parker scores." (Kwon & Easton, 2010, p. 136). Liv-ex.com is the primary electronic exchange for trading fine wine where merchants, brokers, retailers, and consumers can purchase these wine futures in advance of their distribution for retail operations. Created in 2000, the company made a profit of £1.4 million with £54.8 million in revenues in 2011 (Noparumpa et al., 2015). Along with the process of financialization in the fine wine market, several economic studies have shown correlation between experts' ratings, primeur, and auction prices (Cardebat & Livat, 2016; Schamel, 2004; Chauvin, 2013; Faye et al., 2015). In her attempt to identify the macroeconomic determinants of fine wine prices, Jiao (2017) concluded that there is an increasing volatility of prices and subsequent demand for expert opinion from fine wine investors.

4.4 From wine producers and organizations: marketing quality as a business strategy

According to Spawton (1991), the communication mix available to the winemaker consists of wine journalism, word of mouth, advertising, and promotion. Consequently, winemakers, villages, appellations, regions and sometimes countries need to build their reputation and gain media coverage: "It must be stressed that any country's wines compete with several thousand other wines for the attention of the journalists' pens" (Chaney, 2000, p. 479). The marketing of quality involves close contact with critics as part of the overall communication and reputational strategy of winemakers (Parga-Dans & Alonso González, 2017). Wine prices no longer depend merely on production cost, but are also determined by collective and individual reputations (Cardebat & Figuet, 2009; Ling & Lockshin, 2003; Olivesi, 2018; Schamel, 2000; Landon & Smith, 1997). Wine is considered an ideal product for testing reputation (Catriota & Delmastro, 2015), but consumer sensitivity to reputation is higher for premium, super-premium and icon wines (Catriota & Delmastro, 2015). Wine reputation is positively correlated to expert ratings (Oczkowski & Pawsey, 2019): collective reputation is shown to have an impact on consumers' willingness to pay, which rises in line with the reputation of individual winemakers (Landon & Smith, 1997). Schamel (2000, p. 13) concludes his study with a recommendation for local authorities to invest to support regional reputation: "Because regional reputation is a public

good, it may be desirable for governments and/or regional marketing boards to engage in activities to enhance the reputation of particular wine growing areas or varieties from a region.”

According to Bone (1995), the influence of word of mouth (WOM) on product judgment is greater when it comes from an expert. The reputation that wine and wine producers acquire over time is a stronger determinant than liking in driving consumer preferences, willingness to pay, and, most importantly, wine prices (Benfratello et al., 2009). In most cases the relationship between wine price and reputation is stronger than between price and quality (Cardebat & Figuet, 2004). The academic literature confirms the importance of long-term reputation building, which prevails over the short-term impact of a poorer yearly rating from a wine critic in the consumer’s purchasing decision (Landon & Smith, 1997; Ali & Nauges, 2007). The individual reputation of winemakers will also enable them to select their retailers and distributors depending on the positioning they wish to reflect: hotels, restaurants, independent wine stores and export for fine wines, and supermarkets for bigger-volume winemakers (Beverland, 2004). This explains why, for the high-end wineries, reputation management can become almost as important as revenue management (Dressler, 2018). Organizational reputation has become a strategic intangible asset for firms and is one of the most important drivers of their success (Barnett & Pollock, 2012), which is why some companies place prescribers at the core of their marketing and communication strategy (Lamour & De La Robertie, 2016).

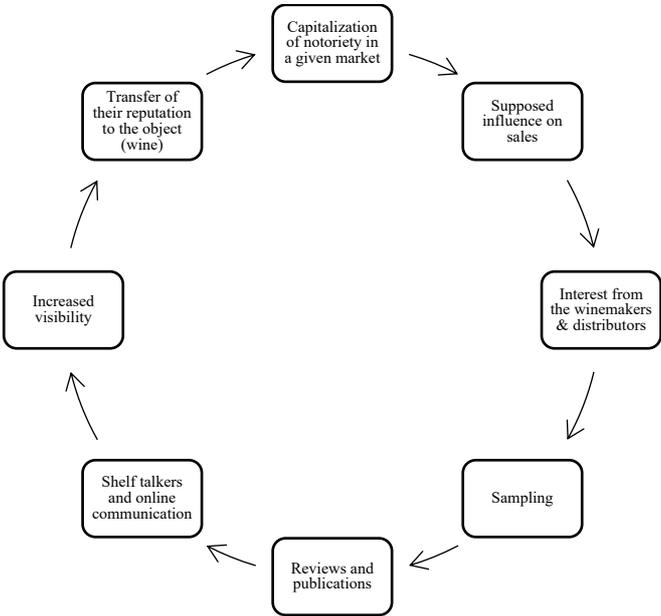
4.5 Financial dependence and impact on prices

Wine critics benefit from close contact with winemakers enabling them to publish interesting articles and well-informed reviews, and reciprocate by disseminating product and company messages (Chaney, 2001). “Producers, and intermediaries such as distributors and retailers, often use favourable reviews to promote products, resulting in a multiplier effect for evaluation where the eventual audience can be magnitudes of order higher than the direct audience (e.g. paid subscription).” (Kwon & Easton, 2010, p. 136). If wine critics and wine publications were not essential to the wine market, it would be impossible for critics to be financially independent from the trade as most critics and publications rely on samples to carry out their activity: “It’d be economically impossible to buy all those wines, especially the ones that are \$100 to \$300 to \$500 a bottle,”⁴ says Mr. Shanken, who noted that the Wine Spectator rates a minimum of 12,000 wines a year. This reliance on solicited samples (Steinberger, 2008) might explain the

⁴ <https://www.nytimes.com/2006/08/13/business/yourmoney/13rate.html> (consulted March 2020)

censorship applied to negative reviews (Gans & Kaplan, 2017). According to Fernandez (2004), critics do not publish low ratings, because they want to preserve the quality of their relationship with winemakers and ensure that they will receive samples from them the following years. By doing so, wine critics may not solve the information asymmetry outlined earlier since when reading their reviews, customers will know what is deemed to be good but not what is deemed to be bad. This interrelation unveils the interest of other actors, namely winemakers, distributors or importers who are willing to provide free samples to have the opportunity to receive a good rating that will help boost their popularity and sales of their wines. “Wine producers, as well as wine retailers, lavish their print advertising with references to critics’ numerical as well as written evaluations. Winemakers decide to participate or not to the multiple events and tastings, knowing that the outcome is mostly positive since the critics do usually not publish any negative reviews. So pervasive is this strategy, the absence of a reference to a critic’s opinion is almost a sure sign that the wine has not been highly rated by any critic.” (Thode et al., 2002, p. 5). Not to mention that wineries also represent important customers for guidebooks, as they tend to share them out among themselves (Odorici & Corrado, 2004).

Figure 3: Wine evaluation virtuous circle



Tasting sessions and the resultant scores are used as a differentiation strategy by wineries to forge a competitive advantage without having to invest money in an advertising campaign (Eyler, 2001). Wineries strategically present wines in competitions to enhance their brands’ positioning and equity (Dunphy & Lockshin, 1998). It has been suggested that customers rely on past quality (and reputation) to infer present quality, and that this prediction can influence

their purchasing decision (Landon & Smith, 1997). Nevertheless, some winemakers are better off not sending their wine to tastings or competitions: “Curated reputation ratings can be damaging when a company compares unfavorably to its peers or to its own past performance” (Gans & Kaplan, 2017). Similarly, endorsement through wine shows proves to be limited among luxury wines, and their entry into competitions has been shown to negatively affect their positioning (Beverland, 2004). Though there is no evidence that wine expertise can predict consumer liking (Lesschaeve, 2007; Schiefer & Fischer, 2008), Roberts & Reagans (2007) reveal a significant decline in pricing variance after producers receive their first critical review, while the impact of experts’ evaluation on demand and market price has been largely demonstrated (Hopfer & Heymann, 2014; Oczkowski & Pawsey, 2019; Kwak et al., 2012; Bentzen and Smith, 2008; Hilger et al., 2011; Ashton, 2017; Bushardt, 2017). For an extensive literature review on wine price determinants, see Outreville & Le Fur (2020). Oczkowski (2018) studied the lagged impact of signaled quality on prices of Australian premium wines and estimated that a one-point quality score increase had an impact on price of more than 10% over six years. But not all ratings have an equal impact on prices, as different publications have different impacts on price and demand (Cavicchi et al., 2013). Roberts & Reagans (2007, p. 67) developed an attention-based theory arguing that the amount of attention a producer receives is linked to his/her history of critical coverage, and that this moderates the impact of experts’ ratings on prices: “These results attest to the dual influence of wine critics. On the one hand, the quality information that they generate can be an important determinant of price. On the other hand, their actions over time channel the attention of the market toward some producers over others.”

5. New Players & Future Evolutions

5.1 Fall of search costs for price, information and expertise

5.1.1 Digital transformation: the emergence of the internet

According to Internet World Stats, there are today more than 4.5 billion internet users on the planet.⁵ The internet affects the way we think, learn and remember, encouraging cognitive offloading (Marsh & Rajaram, 2019). In a world where knowing how to find information is often just as useful as personally possessing the knowledge (Marsh & Rajaram, 2019), the internet offers unprecedented access to detailed information about products, including price comparisons (e.g. www.wine-searcher.com) and expert reviews (e.g. www.wine-lister.com),

⁵ <https://internetworldstats.com/stats.htm> - consulted march 2020

resulting in a subsequent search cost reduction (Lynch Jr. & Ariely, 2000) and increased information capability (Yuan et al., 2019) providing opportunities for optimal decision-making (Branco et al., 2012). Thanks to the internet, the search costs for price, information and expertise have fallen (Anderson, 2004), threatening profits through the search cost for price (price comparison, easy access to other online sellers), but at the same time potentially enhancing them through information and expertise. Consumers see the reduction of search costs for products and product-related information as the main potential advantage of electronic shopping over other channels (Lynch & Ariely, 2000). Internet content, usage and the community involved in the creation of content are evolving at a rapid pace (Marsh & Rajaram, 2019). Recent publications show that social media are gaining importance in the process of wine selection, especially among millennials (Albright et al., 2018; Cosenza et al., 2015; Higgins et al., 2016; Atkin & Thach, 2012). Online wine sales reached \$10 billion in 2019, out of the \$338B generated by the industry.⁶ Similarly, easier access to past price data in a market where quality evaluation is difficult raises the question of the future of evaluators (Coslor, 2016).

5.1.2 The emergence of infomediaries: companies aggregating experts' scores

Intermediaries whose role is to “capture, aggregate, and exploit information about participating parties in order to facilitate the efficient allocation of goods or services” are called “infomediaries” by Bhargava & Choudhary (2004, p. 22). Before the emergence of the internet, critics' coverage depended on the strength of their readership and publication base. Nowadays with the internet, anyone can start a wine blog or Instagram account. The diversity of wine is reflected by the diversity of wine critics, and while wine critics were considered to have reduced information asymmetry, the multiplication of information sources in recent decades has had the reverse effect: the difficulty has switched from selecting the right wine to selecting the right wine expert. This is why some companies now offer an aggregated score of different experts to provide consumers with useful synthesized information.

Table 4: Example of “infomediary” companies aggregating wine critics' scores

Name	Description	Source (consulted March 2020)
GWS – Global Wine Score	The Global Wine Score is an adjusted score aggregating the opinions of major wine critics from around the world. Our proprietary algorithm takes into account each critic's scoring habits and their grading scales to provide a single indicator which minimizes subjectivity.	www.globalwinescore.com/

⁶ <https://medium.com/authority-magazine/meet-the-disruptors-heini-zachariassen-of-vivino-on-the-three-things-you-need-to-shake-up-your-81503b3c693b> - consulted october 2020

Wine Lister	The simple, impartial Wine Lister score is an aggregation of scores from our five official partner critics, along with a small weighting for the ageing potential of the wine. Our partner critics' scores, combined, are a reliable measure for quality of each wine in each vintage. We analyse ratings from five of the most respected wine critics in the world – Jancis Robinson , Antonio Galloni and Neal Martin (Vinous) , Bettane+Desseauve , and Jeannie Cho Lee .	www.wine-lister.com/
Wine Searcher	Wine-Searcher collates scores from a wide range of critics, from influential single palates like Robert Parker and Jancis Robinson to publications like Wine Spectator, all adjusted for the 100-point scale. To generate a wine's average score, Wine-Searcher uses a Bayesian methodology to calculate a weighted average. This average score is calculated for specific vintages of a wine, as well as across all vintages.	https://www.winesearcher.com/wine-scores

The companies aggregating wine critics' scores are still strongly bound to the traditional official prescription model, and offer additional information aggregation benefits (Bhargava & Choudhary, 2004). Scholars suggest that the combination of judgments is more effective than the use of a judgment from a single expert (Ashton, 2011) and that the future lies in hybrid internet-based evaluation aggregators that combine the functions of the third-party aggregator and the market intermediary (Kwon & Easton, 2010).

5.1.3 Game-changers: Evaluative innovation and the rise of informal influence

Evaluative innovation was one of the key elements of market domination in wine evaluation; the 100-point, scientific-sounding legacy of the professional wine evaluator Robert Parker is now very specific to wine (Cicchetti, 2009) and could soon be outmoded. No other product categories are rated on this scale, and according to a former editor of the Wine Enthusiast magazine, although it has helped educate the Americans in fine wines, it now limits the spectrum of wines that sell well.⁷ This is why companies combining the functions of the third-party aggregator and the market intermediary, like Vivino, founded in 2010 (with over \$131 million in wine sales in 2019⁸), have adopted the 5-star or points system typical of online consumer reviews (Kotonya et al., 2018): “While wine experts have traditionally used a 100-point scoring system, in which 90+ point wines are superior wines and 95+ point wines are extraordinary, Vivino uses a 5-star rating system in which users can rate any wine 1 - 5 stars. This kind of rating system is familiar to consumers as it is commonly used across user-generated websites and apps, popularized by companies like Amazon, TripAdvisor and more. When Vivino was founded, this was the system that resonated best with wine drinkers around the globe.”⁹ This system offers consumers an overall quality perception without subscales for wine characteristics, and is accessible to anyone, be it for rating or for using (Cicchetti, 2009). This

⁷ <https://www.nytimes.com/2006/08/13/business/yourmoney/13rate.html> (consulted November 2019)

⁸ <https://medium.com/authority-magazine/meet-the-disruptors-heini-zachariassen-of-vivino-on-the-three-things-you-need-to-shake-up-your-81503b3c693b> - (consulted October 2020)

⁹ <https://www.vivino.com/wine-news/vivino-ratings-explained> (consulted November 2019)

strategy responds to the demand for a more consumer-orientated system of sensory quality evaluation and labeling from a large portion of the market (Schiefer & Fischer, 2008).

5.2 Electronic word of mouth and online rating: the future of external quality validation?

5.2.1 *From selection and reviewer's singularity to inclusion & algorithmic egalitarianism*

In the article titled “One Billion Reasons Why Your Next Wine Will Be Perfect”,¹⁰ published on November 14th, 2019, Heini Zachariassen, CEO of Vivino, addresses both the information asymmetry and consumer confusion issues: “When we created Vivino in 2010, there were already 600 wine apps in the App Store, yet the wine industry remained an intimidating place. It was still difficult for wine drinkers to easily access information, and shopping for wine felt like something that required insider-only knowledge. I didn’t think that was fair. Anyone should be able to walk into a supermarket and quickly figure out if a bottle is worth buying, or not. It should be easy and fun, not overwhelming.”

Though wine quality evaluation by critics has an important impact on wine popularity, it is targeted to a very narrow market of fine wines. The online community rates wines of all categories without discrimination: “There’s a problem in wine: Over 75% of wines are never rated by experts. This is where crowdsourced ratings on Vivino become useful”.¹¹ Community ratings also tackle the negative review censorship issue: “Another advantage our ratings have is that our community members are honest, sometimes brutally so, with their ratings. Many experts opt not to publish poor ratings, assuming that wines that are lacking will eventually take themselves out of the running. But with Vivino, you’ll find a wide range of ratings, letting you know what you can buy with confidence and what wine might not be the best fit”.¹² While their competitors use product selection and reviewer expertise as a differentiation strategy, companies like Vivino use product inclusion and peer-reviewing as a differentiation strategy to review a much more extensive range of wines than wine critics (mostly limited to fine wines): all rated by all rather than only the best rated by only the best.

The success of the application, with more than 1.1 billion labels scanned, 157 million ratings, no price bias (Kotonya et al., 2018) and 43 million users, is disruptive for the wine evaluation market. Unlike traditional wine critics, Vivino does not sell the ratings, they are freely available and easily accessible. In just 10 years, using a disruptive blue ocean strategy,

¹⁰ <https://www.vivino.com/wine-news/one-billion-reasons-why> (consulted November 2019)

¹¹ <https://www.vivino.com/wine-news/vivino-ratings-explained> (consulted November 2019)

¹² <https://www.vivino.com/wine-news/vivino-ratings-explained> (consulted November 2019)

the company has recorded impressive results: it has become the world's largest online wine community and marketplace with more than 48 million users, 188,822,000 reviews and 1.4 billion scanned labels, and 12 million scanned wines from more than 230,000 producers around the world.¹³

5.2.2 Ordinary and fine wines judged by the same standards

Non-official and informal prescription is gaining importance on the wine market; novices' tastes (general hedonic rating) prevail over quality evaluation because personal taste is simply more relevant than quality when choosing a wine (Schiefer & Fischer, 2008). "In this digital age, declarations surface on the death of the expert and the democratization of information. Crowd wisdom is seen as the new guide in constructing and evaluating knowledge." (Arora & Vermeulen, 2012, p. 2). Online community ratings and user-generated information have become increasingly available in just a few decades, and therefore represent quite a new area of research (Basu, 2018). With the internet and the emergence of online rating, wine consumers have shifted from a passive to an active purchase evaluation, and their comments displayed online provide an informative signal of quality (Cheung & Lee, 2012) that can either help or hurt a business (Gans & Kaplan, 2017): "In modern times, we assume that our task – the only legitimate task – is to form our own assessment of wine's goodness. That is democracy at an organoleptic level; it is subjective individualism raised to a moral principle." (Shapin, 2012, p. 83).

The importance of crowdsourcing amateurs' opinions is increasing, and so is their impact on the market. Zhang et al.'s (2010, p. 694) findings are consistent with Steinberger's (2008, p. 134) observation of the empowerment of the vox populi: "With the growing availability and popularity of web-based opinion platforms, online product reviews are now an emerging market phenomenon that is playing an increasingly important role in consumer purchase decisions". The focus is shifting from formal (curated) to informal (uncurated) recommendation, reaching a larger social circle than family, friends and colleagues through electronic word of mouth (eWOM) (Park et al., 2007). There is a clear gap between the prevalence of the taste of wine, as described by the experts, and the taste for wine – the fact of considering personal taste more relevant than quality in choosing a wine – as defended by recommendation systems like Vivino (Smith, 2017). Hedonic price function estimates suggest that wine prices are better explained by the use of online community rating scores than by expert

¹³ <https://www.vivino.com/about> (consulted January 2021)

ratings (Oczkowski & Pawsey, 2019). The democratization of wine drinking and enjoyment differs from the democratization of judgment, which one could refer to as the disappearance of the experts (Mellet et al., 2014). Accordingly, Cox & Kaimann (2015) predict that the growing influence of word of mouth and consumer-generated content in consumer purchase decision-making could lead to the exclusion of the traditional reliance on the opinions of experts or professional critics. “For the experts, they could consider integrating consumers’ judgments into their marketing strategy, as seen in the famous Rotten Tomatoes website, which provides the movie judgments of both experts and consumers on the same web page. Doing so would increase the visibility for consumers, enhance the authority of experts, and deal with the observed empowerment phenomenon of online communities.” (Clauzel et al., 2019, p. 403).

6. Conclusion

When the language used to speak about wine, and to describe it, was limited to a merchant’s judgment to detect flaws, it only allowed consumers to avoid bad and adulterated wines. The twentieth century brought with it an aesthetic wine judgment, grounded in hedonic and evocative vocabulary and standardized tools (ISO glass) and methods for sensory evaluation. The emergence of purchasing recommendations from market intermediaries, in the form of consumer-oriented publications, appeared as a response to the demand for quality definition and the correction of information asymmetry, concomitantly with the shift upmarket of consumption in the traditional producing countries and a rising interest in quality wines in anglophone countries. The creation of a powerful industry of information and specialized valuation in the main wine markets of the world helped to avoid the market failures associated with informational asymmetry (Compés-López et al., 2018). The exploration of the genesis of wine quality evaluation from a historical perspective highlights the importance of the 1970s and the anglophone influence on market emergence and the growing importance of consumer unions and advocates further to the rise of wine evaluators during this same period.

The wine evaluation market could not exist without the demand for quality evaluation and judgment delegation stemming not only from wine consumers, but also from wine producers, organizations and marketers, as well as from wine investors. The analysis of wine evaluation market mechanisms reveals that the existence and activity of wine critics actually benefit all the stakeholders on the wine market. Apart from the correction of information asymmetry, it enhances collective and individual reputations and influences the quality perception of the products on the primary market. The demand for expert opinion and external quality validation originates, as would be expected, from wine consumers, but also,

concomitantly, from the production and distribution side. For customers, expert assessment reduces quality information asymmetry, simplifies decision-making, avoids confusion, and helps to ensure that they have made the right choice. For producers, it increases the media exposure of their wines and constitutes an efficient promotion tool. Clearly, wine experts enhance collective and individual reputations and influence the quality perception of their product on the market. They contribute to building the reputation of winemakers and to reducing information asymmetry by reporting on the wines they taste (Cardebat & Livat, 2016). And for the wine market, they increase the exposure of products and help to make wine something more than a fast-moving consumer good (FMCG), by valuing not only wines they rate, but also wine economics globally over the years (Olivesi, 2016). Wine experts are the main contact point and play a vital role as intermediaries between supply and demand (Chossat & Gergaud, 2003), providing consumers with a useful benchmark when they buy a bottle of wine and producers with foresight into what wine style will sell better according to their influence and tasting notes (Olivesi, 2018). Experts work as a third party, drawing critical attention to specific producers, and are considered neutral because they do not directly engage in the transaction when attesting to a product's worthiness (Gans & Kaplan, 2017). In most cases, censorship is applied to negative reviews: wines that do not reach the expected level of quality do not appear in reviews and only the best winemakers are visible, so the reputational threat is limited for companies if they do not pass the selection phase (Gans & Kaplan, 2017).

The present research demonstrates that the professional wine evaluation market fails to meet the demand for quality evaluation and judgment delegation apart from with fine wines. Subsequently, with the fall of the search cost for price, information and expertise, we are witnessing a digital transformation towards informal influence. While it is commonly accepted among wine professionals that some opinions are more important than others, the limitation of expert wine evaluation to fine wine and the complexity of the evocative vocabulary have created an opportunity for peer-reviewing. The emergence of the internet and subsequent fall of the search costs for price, information and expertise have disrupted the wine evaluation market. The emergence of eWOM and informal influence have led to a democratization of wine judgment, where ordinary and fine wines are judged by the same standards, and where anyone with an internet connection can express an opinion. New disruptive business models have appeared in which wine experts' opinions are aggregated by infomediaries and wine drinkers offer theirs for free. The importance of wine experts or peer-reviewing in the purchase decision

shows the sustainable tendency of consumers to rely on the experience of others to make their purchase decision (Johnson & Bruwer, 2004).

We are witnessing a modification of the equilibrium of the wine evaluation market: its center gravity is moving from a market where information was transmitted from the industry to consumers, to the emergence in the 1970s of consumer-oriented professional independent third parties selling information about quality evaluation, to a market over the last decade or so where consumers exchange and use quality information that is generated by other users without financial compensation. In this new system, wine evaluators are no longer professionals selling their opinions and making a living out of it, but individuals whose opinions are used to promote and sell wine on evaluator systems that have become marketplaces. Important changes are afoot in the wine evaluation market: in areas traditionally set aside experts, the roles of social media and experts have evolved meaningfully in the past few years with the growing self-confidence and self-reliance of wine consumers and the disappearance of the demarcation between marketplace and prescription.

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