The greatest French AOCs: A signal of quality for the best wines.

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Abstract

The law of the 30th of July of 1935 has created a specific type of French wine: AOC wines. These wines use the notion of terroir to distinguish from the other wines. A terroir relies on natural and human factors and their specificities. This using provides an image of specific quality. Even though this specific quality has not the official aim to provide a higher intrinsic quality, it was created to make a vertical distinction between the AOC wines and the other wines, while it created a horizontal differentiation within the AOCs. In this sense, the AOCs are use as signal of quality for the wines which want to maintain a highest quality in comparison with ordinary wines.

However, the question concerns the reality of this role for the best wines. Indeed, the horizontal differentiation prevents to make a hierarchy of quality between the AOCs because leaning on the idea of homogenous AOCs with only difference on the quantity of the same characteristics. But a vertical differentiation could be created according to the notion of typicité coming from terroir. To detect those, two complementary steps are necessary. First, human factors providing weak typicité are detected with a PCA (Principal Components Analysis) which focuses on the conditions of production within the vineyard area of Burgundy. From this PCA, three groups of AOCs can be defined according to the degree of typicité. Secondly, natural factors providing weak typicité are listed through the possibility of fallback position. Finally, three groups of AOCs, called weak typicité, standard typicité and high typicité appear within the AOC wines of burgundy.

Thus, the interest of this vertical differentiation is to detect its impact on the intrinsic quality measured. If the AOCs are a good signal of quality, there must have a hierarchy of the intrinsic quality according to the degree of typicité.

To check it, the intrinsic quality of wines can be measured by both experts’ rating of Parker and Gilbert & Gailllard after an evacuation of the climatic and the individual behaviours of growers’ impacts. Then, the statistical test of Kruskal-Wallis can be used to detect the relation between the degree of typicité and grades of both experts.

The results partly confirm the expectations. There is a relation between the degree of typicité and the expert’s ratings but the nature of this relationship is explained by the link between high typicité and the best wines, standard and weak typicité involving almost the same level of intrinsic quality.

Consequently, the AOCs can be considered like a good signal of the best wines only when they have a terroir with high typicité.

Key word: AOC, Signal of quality, typicité, terroir.
Introduction

Perceived quality depends on consumers’ global evaluation according to the available information. (Oude Ophuis, Van Trijp, 1995, 177).

Usually, the characteristics of a product used for this judgment are known through the experience. It is specifically true for the food processing product, both direct (from the consumer) and indirect (from other people) experience. This is used like information coming from the interaction between feeling and memories which shows the learning of consumers (Bessy, Chateauraynaud, 1995, 196-197).

But, without the direct experience of the product, perceived quality will depend of the received information (Holt, 1995, 13). In this sense, perceived quality comes from the available information for consumers. Each interpretation by them needs information about characteristics. This is only partially possible due to the transaction costs linked to the information. These were showed by Coase, with his famous article “The nature of the firm” and come from the multiplication of short contracts involved by the necessity to manage the expectations and obligations between each actor (Coase, 1937, 391).

These costs notably appear before or during the sell of a good or service (Williamson, 1994, 48). For Barzel (1982, 172), the measurements about product information are subject to error. “The greater the variability of the measurement around the true value, the lesser the information about the commodity.”

These costs are explained by the asymmetric information. According to Lancaster, price is the best signal of quality thanks to the perfect information. However, Grossman and Stiglitz (1980, 405) showed that it is true only with an easy available information, situation which is very rare. It involves real dangers for the good working of markets. Indeed, there can be an asymmetrical information which could involve opportunistic behaviours of suppliers with bad effects as Hazard Moral (Arrow, 1963) and adverse selection (Akerlof, 1970).

This is why the suppliers of good product have developed strategies which provide information about the quality of their products with a signal of quality (Spence, 1973; Viscusi, 1978).

These are multiple forms (Kirmani, Rao, 2000) and are exist within the wine sphere. In this activity, they depend of the culture of producers (Sylvander, 1996; Peri, Gaeta 2000) and can be divided between the logic of terroir and the logic of brands.

These notions were sometimes defined alone (Lassaut, 1995; Ricard, 2004) but they are often defined in opposition (Hannin, Codron and Thoyer, 2002). Behind the logic of terroir, we find the AOCs and behind the logic of brand, the individual brands (Croidieu, Morin, 2006).

Today, AOCs are challenged by the logic of brand due to the issue of their monopolistic guaranteed income. Some assume that this is not justified and provide a dysfunction of markets. These authors claim that AOCs are inefficient at providing good information about intrinsic quality.

These criticisms involve a checking of the link between the use of AOCs and the intrinsic quality of wines.
Context.

According to Boulet and Faillenet (1973), even though there are several types of wines in France, the split between vintage and ordinary wines has appeared like a fundamental characteristic within the French wines. Vintage wines delimited by restrictive conditions of production and enjoy a high social value, while ordinary wines were due to a wide production and take nutritional value. First of all, the distinction between the two families has a social origin. However, it has officially legitimated thanks to the AOCs regime which has been applied with the decree of the 30th of July 1935. From this decree, the separation between ordinary and AOC wines has become logical. The opposition between quantity and quality, the use of specific vine and specific conditions of production arise like the explanation of the split.

In this sense, the AOCs set down a characteristic of geographical origin (Maze, Valceshini, 2000, 32). Today we speak about terroir.

\[ a) \] A simple theoretical framework of differentiation.

The notion of terroir, used since long time to design the French AOC wines in order to sum up the production usages (Caput, 1947), is the subject of great debates (Vaudour, 2003). At this time, there were several antagonist definitions, between the natural characteristics and the Human impact on those (Doledec, 1995, 5).

Today, the economist positions are shared and some of them only prefer to keep only climatic and pedological elements in order to focus on the technological impact on the wine’s quality (Gergaud, Ginsburgh, 2005).

However, others think that terroir is more complex. Barham (2003, 135) notified that to award an AOC to a product, the naturals factors and human factors are decisive. These factors constitute the framework of the notion of terroir and determine the typicité of products.

Recently, this last way was confirmed by the general definition proposed by INRA (Institut national de la recherche agronomique) and INAO (Institut national des appellations d’origine)\(^1\). Behind this definition, we found the idea of an interaction between two factors, could be defined as following (Béranger et al. 2005):

- **Natural Factors** are geographical, geological and climatic characteristics considered like objective variables.
- **Human factors** are the human know-how used in the elaboration of the product. For the AOCs, there are linked with restrictive conditions of production.

Otherwise, in this definition, the idea is this interaction should guarantee a strong typicité for the AOC wines, even though it is not an automatic link.

Typicité is the property to belong to a kind of product, leans on know-how and frames on the specificities of this kind. For the terroir, it is meant the terroir effect on a product\(^2\). Thus, it supposed that typicité of terroir is possible only with an interaction between unique natural factors and the specific human factors used to produce the wine.

This link is very important to defend the quality image (Laporte, 2000, 558) and moreover the specific quality. It means a quality leans on unworkable specific inputs (human and natural factors for terroir) due to the technical reasons, specific transactions or legal reasons (Allaire, Sylvander, 1997, 32-59).

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1 This definition can be considered as the official definition according to the using by the INAO.
2 Typicity could exist without terroir, i.e. “Coca-cola” belongs to soda with non sharing technical know-how but without terroir.
From these concepts, we can say that the AOCs regime want to create both vertical and horizontal differentiation as define by Lancaster (1996, 157 and 166).

First, with the using of the notion of terroir, there is a vertical differentiation between AOCs and ordinary wines.

Even though the specific quality is apparently not synonym of higher quality, the framework of the AOCs shows the willpower to increase the quality of AOC wines in comparison with ordinary wines. Indeed, the lawmakers explained:

*The controlled appellations’ institution, (...), will stimulate progress due to the advantages linked with this qualification. The winegrowers will have to get disciplined, to rule out the big yields in opposition to the production of vintage wines. Ugly types of vine will have to be replaced for noble types of vine: for a search of quality instead of quantity. It is an issue of life and death for the great French wines.*

Thus, there is a vertical differentiation thanks to specific know-how and restrictive conditions of production (vine, small acreages, etc.). The ordinary wines have worse quality due to the absence of terroir and could be considered as inferior wines (Lagrange, Marsat et Trognon, 1999).

Secondly, the using of a terroir involves a horizontal differentiation between AOC wines. Usually, each AOC is specific with unique terroir. Consequently, their quality cannot be ordered or compared. In the other way, AOC wines belong to the same regime and should present the same level of quality. But each specific quality involves different quantity of characteristics according to the criteria of terroir. The differentiation is only the result of the heterogeneous consumers’ behaviour for the expected quantity characteristics.

<table>
<thead>
<tr>
<th>Kind of differentiation</th>
<th>Differentiation from one AOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal</td>
<td>Other AOCs</td>
</tr>
<tr>
<td>Vertical</td>
<td>Ordinary wines</td>
</tr>
</tbody>
</table>

### Table 1

The concept of AOCs: between vertical and horizontal differentiation.

*b) A complex reality to define the intrinsic quality.*

In theory, we can speak only about horizontal differentiation between French AOC wines, thanks to the notion of terroir. But, usually, the framework of AOCs can reveal the existence of a vertical differentiation. Indeed some AOCs show a weaker typicité than others. This idea is old and is assumed with the concept of generic AOCs.

Nowadays, the generic AOCs do not have any official definition. We can sum up the concept that a generic AOCs from a set of information.

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3 Free translation.

4 Today, this theoretical vertical differentiation is harder and harder to maintain due to the development of the French country wines which use more and more the idea of a specific terroir without the using of an AOCs (Menival, 2005)
First, generic AOCs do not seem to have a strong goodwill to maintain a monopolistic price. This case comes from the studies of INAO which speak about generic AOCs from a price hierarchy.

Secondly, generic AOCs could be defined from the weak restriction of the supply (Collard, 2004). Currently, the CNAOCs (Conseil National des Appellations d’Origine Contrôlée) works on the distinction between AOCs with different degrees of restriction (CNAOCs, 2004).

In the same way, several think that regional AOCs are synonymous of generic AOCs (Bartoli, Boulet, 1989; Giraud-Héraud, Soler and Tanguy, 2002) but these distinctions do not work for all the French vineyards.

This is why we must pass these ways and distinguish AOCs from the idea of Béranger and al. (2005): the link between specific quality and the AOCs is not automatic.

So, we assume that according to the natural and human factors, quality could evolve from weak to high typicité.

To show this, we must lean on two definitions of weak typicité of human and natural factors. For the human factors, they are linked with the technical conditions of production. So, they have a weak typicité when the scarcity is minimal due to the weak restrictions of production. For the natural factors, they have a weak typicité when the geographical, climatical and geological characteristics are not present in only one AOC. It is very hard to have data of these for each AOC but we can use the particularity of some AOCs with the system of fallback. This situation is useful when the specific conditions or the practices of grower prevent to use his AOC. To stop him getting out of order or distillation, he can claim a fallback AOCs with technical conditions weaker if it is possible and if INAO agrees (CIVB, 1997, 17). This solution is possible according to the article L 641-20 of the French rural code.

Finally, we have to put in order the AOCs which do not correspond to the link quality/scarcity. Thus, it has conditions of production least restrictive and it can arise as a fallback position to other AOCs when they do not respect their conditions of production. Consequently, we assume that there is a vertical differentiation between AOCs from the High typicité to the weak typicité.

<table>
<thead>
<tr>
<th>Table 2</th>
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<tr>
<td><strong>A vertical differentiation within the AOCs.</strong></td>
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<table>
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<tr>
<th>Kind of AOCs</th>
<th>High typicité</th>
<th>Standard typicité</th>
<th>Weak typicité</th>
</tr>
</thead>
</table>

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5 Currently, the Pomel report of March 2006, for a change of the French wine industry, wants to forbid the system of fallback (Morel, 2006, 25). However, even though it will be confirmed, the lack of typicité of the ancient fallback AOCs became a reality.
Obviously, this relation could work only within vineyards concern by this distinction. It is not meaningful to compare the technical conditions of AOCs coming from different vineyards, each of one having a variation of climatic could explain the gap between the general conditions of production, i.e. the grapes maturity could be not the same for Champagne and Côte du Rhône. So, we assume that there are AOCs in each vineyard which provide a weaker typicité than others according to the notion of terroir.

From this split, the good working of AOCs, as signal of quality, can be proof only with a strong link with the intrinsic quality. Weaker the typicité of terroir is, weaker the intrinsic quality of wines should be.

Method
To check the potential relationship, we must create a hierarchy of AOCs from typicité, a hierarchy of the wines according to their intrinsic quality and then to search the link between these orderings.

a) The construction of a hierarchy of AOCs from typicité.

For this step, we lean on the AOCs of Burgundy\(^6\). The choice of this vineyard come from both its wide set of AOCs and the easiness to use the quantitative information of these. On one hundred AOCs, we work with thirty nine, due to the data used.

To check this hypothesis, we have firstly to search the AOCs with the weakest specific human factors. This is why we use a PCA (Principal Components Analysis) from the conditions of production defined within the application decrees.

We can find six variables from these texts: Authorized yield per hectares, maximum legal appellation yield, minimum sugar per litre (in gram), minimum natural alcohol (in percent), maximum authorized alcohol (in percent) and the range of plants density.

However, we can use only the five firsts, due to the lack of variability of the last one in the application decrees\(^7\).

Then, we will analyse the AOCs with the weakest specific natural factors and the weakest specific human factors. Consequently, we will add up the result of PCA with the possibility of fallback position for each AOC in order to create a hierarchy from the degree of typicité.

b) The construction of a hierarchy from intrinsic quality.

The intrinsic quality of wines is very hard to determinate but it is a great purpose to avoid the failure of the markets. This is why the signal of quality is so important to reduce the asymmetry (Spence, 1973; Viscusi 1978). Among them, we can use the experts’ gradation.

The experts have more and more impact on the modern economic decisions (Ginsburgh, Van Ours, 2003, 1) and can give partial or total information on the intrinsic quality (Wolinsky, 1993, 1) in spite of the costs. In the wine world, this impact could be explained by two cumulative reasons:
1. Wines could be considered like credence goods, as defined by Darby and Karni (1973), and need the intervention of third party to signal the quality.

2. The wine market is concerned by a movement of globalization (Jesus Oliviera Coelho, Rastoin, 2001) involving the multiplication of the supply and thus the rise of the information costs.

But as for all the signal of quality, the trouble of expert’s graduation is about the objective information and the reflection of the intrinsic quality of wine. For Lecocq and Visser (2006, 52), the jury grade is primarily determined by sensory characteristics. So, there could be a bias in the experts’ evaluation.

However, for Benjamin and Podolny (1999) this bias is minim thanks to the using of clarified methods of evaluation.

Aware of the limits we assume that the expert’s evaluation is a good signal of the intrinsic quality only after the evacuation of some risks of bias: the opacity in the methods of evaluation and the subjectivity coming from the cultural origin.

The opacity in the methods of evaluation could be wiped out with quantitative graduations. Today, there are lots of guidelines which use a wide range of graduation: numbers of stars, number of bottles, qualitative categories, etc. Sometimes, there are not explanations of the hierarchy framed (as almost all the guidelines belong to the popular review). It is why we decided to use an international rating with a good measure of magnitude:

- 70-74 points wine: Below Average wine
- 75-79 points wine: Average wine
- 80-84 points wine: Good wine
- 85-89 points wine: Very Good wine
- 90-94 points wine: Excellent wine
- 95-100 points wine: Exceptional wine

The subjectivity of evaluation could be reduced with the using of two opposites experts which use a clarified method but with sensory characteristics. The idea is to choose experts according to their nationality which present some differences for the taste of wines. Then, we will make a comparison to know if there is similitude between them.

From these limitations, we select two guidelines: Le guide Parker des vins de France and Guide Gilbert & Gaillard des vins. Both use the international rating to create a hierarchy between the evaluated wines. They also use sensory characteristics but with a clarified method: the range of points depends of the characteristics found.

At last, Parker is American while Gilbert & Gaillard are French experts. So we assume that they are not the same taste of wines.

Some more precautions.

In order to measure the rule of AOCs to reveal the intrinsic quality, we have to take some more precautions.

The first one is about the eventual impact of the climatic accident on the intrinsic quality. We know that according to the glut of heat or wet, the quality of wine could change. Here, we want only to measure the link between the used AOCs and the expert’s notation. So, we use
the Parker’s guideline of 2001 and the Gilbert&Gaillard’s guideline of 2006. Consequently, the notations come from different vintages.

The second one is about the eventual impact of the personal techniques of producers. Even though an AOC give some rules to follow, we know that producers have a wide set of possibilities within these rules. So, we will make a synthesis of the notations for each AOC and then make the comparison of these. It is why we will use the means for each evaluated AOCs by Parker and Gilbert & Gaillard who evaluate different samples of growers of same AOCs.

c) The comparison between the intrinsic and AOCs hierarchies.
We search to know if there are a relation between the grades of AOCs and the degree of typicité and moreover if the high typicité can explain the high intrinsic quality measured by experts. So, we make a comparison of the notations of the AOCs belong to the three groups of typicité: weak, standard and high typicité.

In this way, we could use a comparison of means with the One Way Anova but the test of Kolmogorov-Smirnov reveals a non normal distribution of the subgroups. So we use the non parameter test of Kruskal-Wallis to compare the median of each subgroup to the significance level of 95%.

Hypothesis
\[ H_0: \nu_{hs} = \nu_{ss} = \nu_{ws} \]
\[ H_1: \nu \text{ are not all equal.} \]

With hs: group of high typicité,
ss: group of standard typicité
ws: group of high typicité.

This test must be realised for the notations of Parker and for the notation of Gilbert & Gaillard in order to confirm the objectivity of the intrinsic quality.

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8 For Parker, vintages are between 1995 and 2000. For Gilbert & Gaillard, they are between 2000 and 2004.
Result.

From the PCA, we find two factors which mean around 96.61% of all the variables, after a Varimax rotation.

The first one is a good synthesis for the minimum sugar per litre (in gram), the maximum authorized alcohol (in percent) and the minimum natural alcohol (in percent). So, we assume that it shows the degree of the necessary maturity of grapes.

The second factor is a good synthesis for the maximum legal appellation yield and the authorized yield per hectares. So, we assume that it shows the maximum authorized crushing.

\[ \begin{array}{|c|c|c|}
\hline
\text{Variable} & \text{Component 1} & \text{Component 2} \\
\hline
\text{Minimum sugar per litre (in gram)} & .976 & -.211 \\
\text{Maximum authorized alcohol (in percent)} & .976 & -.213 \\
\text{Minimum natural alcohol (in percent)} & .972 & -.215 \\
\text{Maximum legal appellation yield} & -.141 & .953 \\
\text{Authorized yield per hectares} & -.281 & .915 \\
\hline
\end{array} \]

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 3 iterations.

Thanks to these factors, we can define three groups of AOCs according to their position within the mapping (graph 1).

1. The first one has small maximum authorized crushing and high necessary maturity of grapes. It is belong by AOCs with a high \textit{typicité} of human factors.
2. The second has small maximum authorized crushing and small necessary maturity of grapes. It is belong by AOCs with a medium \textit{typicité} of human factors
3. The third has high maximum authorized crushing and small necessary maturity of grapes. It is belong by AOCs with a weak \textit{typicité} of human factors
Graph 1
The degree of typicité for human factors.

Table 4
Groups of AOCss from the degree of typicité about human factors.

<table>
<thead>
<tr>
<th>High typicité</th>
<th>Standard typicité</th>
<th>Weak typicité</th>
</tr>
</thead>
<tbody>
<tr>
<td>BONNES-MARES</td>
<td>BEAUNE (+1er crus)</td>
<td>ALOXE-CORTON (+1er crus)</td>
</tr>
<tr>
<td>CHAMBERTIN</td>
<td>CHAMBOLLE-MUSIGNY</td>
<td>BOURGOGNE</td>
</tr>
<tr>
<td>CHAMBERTIN-CLOS DE BAZE</td>
<td>CHASSAGNE-MONTRACHET</td>
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</tr>
<tr>
<td>CHAPELLE-CHAMBERTIN</td>
<td>CHOREY-LÈS-BEAUNE</td>
<td></td>
</tr>
<tr>
<td>CHARMES-CHAMBERTIN</td>
<td>CÔTE DE BEAUNE-VILLAGE</td>
<td></td>
</tr>
<tr>
<td>CLOS DE LA ROCHE</td>
<td>CÔTE DE NUTS-VILLAGE</td>
<td></td>
</tr>
<tr>
<td>CLOS DE VOUGEOT</td>
<td>FIXIN (+1er crus)</td>
<td></td>
</tr>
<tr>
<td>CLOS SAINT-DENIS</td>
<td>GEVREY-CHAMBERTIN (+1er crus)</td>
<td></td>
</tr>
<tr>
<td>CORTON</td>
<td>GIVRY (+1er crus)</td>
<td></td>
</tr>
<tr>
<td>ÉCHEZEAUX</td>
<td>MARSANNAY</td>
<td></td>
</tr>
<tr>
<td>GRANDS ÉCHEZEAUX</td>
<td>MERCUREY (+1er crus)</td>
<td></td>
</tr>
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<td>MONTHÉLIE (+1er crus)</td>
<td></td>
</tr>
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<td>LATRICIÈRES-CHAMBERT</td>
<td>NUITS-SAINT-GEORGES</td>
<td></td>
</tr>
<tr>
<td>MAZIS-CHAMBERTIN</td>
<td>PERNAND-VERGELESSES</td>
<td></td>
</tr>
<tr>
<td>MUSIGNY</td>
<td>POMMARD (+1er crus)</td>
<td></td>
</tr>
<tr>
<td>RICHEBOURG</td>
<td>SANTENAY (+1er crus)</td>
<td></td>
</tr>
<tr>
<td>ROMANÉE-SAINT-VIVANT</td>
<td>SAVIGNY-LÈS-BEAUNE</td>
<td></td>
</tr>
<tr>
<td>RUCHOTTES-CHAMBERTIN</td>
<td>VOLNAY</td>
<td></td>
</tr>
</tbody>
</table>

High specificity

Standard specificity

Weak specificity
But these three groups are not enough to determine the hierarchy of AOCs according to the degree of typicité. They are only defined from the human factors. Thus, we must add up these groups with the situation of fallback position. In this sense, we focus on the different area and vines. This research of fallback position consists in doing a count of AOCs which can receive others within their vineyard area. Then, watch the position of these according to the human factor and move down them in the weaker group of typicité if it is necessary.

From the logic of Burgundy’s AOCs, the changes of groups can only concern these within the standard typicité of human factors, high typicité brings together almost all “Grands crus” which have the highest restrictive conditions of production.

Example:
Gevrey Chambertin (+ 1st crus) is in standard typicité for human factors but it can receive eight other AOCs in its area: Chambertin, Chambertin-Clos De Baze, Chapelle-Chambertin, Charmes-Chambertin, Mazis-Chambertin, Ruchottes-Chambertin, Griotte-Chambertin and Latricières-Chambert. So it transfers in the group of weak typicité for its terroir.

Finally, we can determinate three groups of AOCs according to the degree of typicité of their terroir, the first, called high typicité, the second called standard typicité and the third called weak typicité.

Table 5

The degree of typicité for the Burgundy’s AOCs according to the terroir.

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<td>POMMARD (+1er crus)</td>
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<tr>
<td>RUCHOTTES-CHAMBERTIN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From these groups, the interest is now to show that the degree of typicité can be considered like a good signal of the intrinsic quality. So, we use the non parameter test of Kruskal-Wallis.

The first step of this test is to know if the difference between the medians of notation about each subgroup of typicité is meaningful for all the burgundy’s AOCs to the significance level of 95%.

<table>
<thead>
<tr>
<th>Chi-Square</th>
<th>Parker's notation</th>
<th>Gilbert &amp; Gaillard notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>df</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Asymp. Sig.</td>
<td>.000</td>
<td>.003</td>
</tr>
</tbody>
</table>

\[ a \text{ Kruskal Wallis Test} \]
\[ b \text{ Grouping Variable: Degree of typicité} \]

From the table 2, we can confirm that both parker’s notation and Gilbert & Gaillard notation. Thus, they are a relation between the degree of typicité and the notation for all the AOCs of Burgundy. Moreover, we can say that the typicité is a good signal of the intrinsic quality, thanks to the significance of the relation for the two experts.

The second step is to focus on the nature of this relationship to know if the degree of typicité reflects the hierarchy of notations. In this sense, we must find a real and ordering gap of mean rank between each subgroup.

However, this is not completely confirmed with the table 3. Indeed, we can say that the high degree of typicité is a good signal of the intrinsic quality for the best wines of Burgundy but is not enough to distinguish the standard and the weak intrinsic quality of wines.

The gap between the mean rank of high typicité and standard typicité is big for the two expert’s but small between standard typicité and weak typicité and only for Parker.

<table>
<thead>
<tr>
<th>Degree of typicité</th>
<th>N</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parkers’s means</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High typicité</td>
<td>18</td>
<td>30,50</td>
</tr>
<tr>
<td>Standard typicité</td>
<td>12</td>
<td>11,58</td>
</tr>
<tr>
<td>Weak typicité</td>
<td>9</td>
<td>10,22</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Gilbert &amp; Gaillard means</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High typicité</td>
<td>6</td>
<td>16,50</td>
</tr>
<tr>
<td>Standard typicité</td>
<td>8</td>
<td>7,00</td>
</tr>
<tr>
<td>Weak typicité</td>
<td>5</td>
<td>7,00</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

Finally, the AOCs is a good signal of highest intrinsic quality only when the terroir have a strong typicité but do not give real information when this typicité is standard or weak.
Conclusion.

In this paper we used a statistical test to confirm the link between the degree of typicité and the intrinsic quality of AOCs for Burgundy. From this study, it appears a relation only between the highest degree and the best wines of this vineyard. Consequently, the AOCs can be considered like a good signal of the intrinsic quality only when they have a terroir with high typicité.

We know that there is asymmetric information on markets which includes costs about information on intrinsic quality. This why, offers need signal of quality to inform consumers. In the wines activity, among all the signal of quality in French, the AOCs predominate.

Since a long time, terroir is the concept defended behind the French AOCs. From it, the idea is that AOCs are synonymous of specific quality thanks to typicité both human and natural factors. Currently, even though it is not an official signal of highest quality, it uses like that. Indeed, through the notion of terroir, these wines want to provide a vertical differentiation between the ordinary and vintages wines and horizontal differentiation within AOCs wines. This last differentiation leans on the idea of homogenous AOCs with only difference on the quantity of the same characteristics.

However, this assume can be removed. Currently, we can distinguish a hierarchy between AOCs through the degree of typicité. Among of them, there are some with a terroir without a real typicité both for human and natural factors. It should involve a vertical differentiation between AOCs. From this vertical differentiation, it appears a distortion of the role of AOCs as a signal of quality. According to the official position of the INAO, this hierarchy should show the degree of intrinsic quality of wines.

To check it, we firstly created a hierarchy of the AOCs about the vineyard area of Burgundy. Thanks to PCA and then the definition of fallback position, it appears three groups of AOCs: weak, standard and high typicité according to each terroir. Then, comparing with the hierarchy frames with the rating of Parker and Gilbert & Gaillard, the degree of typicité is a good signal of the intrinsic quality for the best wines of Burgundy.

These results allow AOCs to be considered as a good signal of quality but only when they have a high typicité and for the best wines.

But, this conclusion keeps its limits because we do not know if it can be generalized on whole AOCs. This study must be supplemented with statistical test for all the French vineyards concerned by AOCs. Otherwise, it could be interesting to consider other variables with the degree of typicité to measure its real signification to detect the intrinsic quality.
References.


