

# Study of growth opportunities for Sicilian sparkling wines market by a Simple Correspondence Analysis and a Focus Group

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## Abstract

Sicilian territory vocation to the production of wines is a prerequisite needed to ensure a large variety of high quality products, very appreciated by national and international markets. Indeed, Sicily produces sparkling wines since the past century and now there are 21 Sicilian wineries that produce high quality sparkling wines. Currently, Sicilian sparkling wines are sold in the local market, however, customer penetration is still low due to a lack of communication and advertising. This paper is divided in two parts and aims to investigate through an *experimental survey*, possible growth opportunities for Sicilian sparkling wines market. In the first part we applied the Simple Correspondence Analysis (SCA), to data collected by a questionnaire given to a sample of consumers participant to a blind tasting, in order to know, on the basis of an opinion on taste, the structure of dependence among the types of sparkling wines tasted, the prices and the places of purchase. In the second part, through the Focus Group technique (respondents were a sub-sample of the participants to the blind tasting), we examined the preferences of the group and its perception about taste, price and place of purchase for the sparkling wines tasted.

**JEL classification:** C39, M31, Q13.

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## **1 Introduction**

Sicily, which is noted for its territorial and environmental characteristics, is a land particularly adapted to the cultivation of vines, and already, for many years, Sicilian wines have had a reputation which goes beyond national frontiers.

Due to these characteristics, the region also lends itself well to sparkling wines (spumanti) that, whilst already present in the market, are not particularly well known by consumers, but, on the other hand, the recent crisis in sales of champagne in Italy could certainly serve as an incentive to open up the market for this product.

Additionally, since 2007 in Italy a positive trend has been noted for both home sales and export of sparkling wines compared with champagne, and, in 2009 the records show that production has surpassed that of champagne by 22 bottles to 1.

Starting with this premise came the idea to want to understand better the sparkling wine sector in Sicily and eventually make an evaluation that would allow the production companies to expand their product range launched into this market segment.

The outcome, therefore, is the importance of informing consumers about these products with targeted publicity and, at the same time, gather as much information as possible as to how the consumers view these sparkling wines.

To this end, through a questionnaire prepared specifically for and presented to a sample of consumers, information regarding how the product is liked, possible ways of influencing the consumer's buying patterns, and above all, to know the price point of those willing to purchase this product.

This way it has been possible to confirm the strong points as well as the weak points of the production of Sicilian sparkling wine and to pinpoint any possible action to evaluate production, whilst being a niche product would allow bringing to the market a product of good quality with a strong territorial imprint.

### **1.1 A glance at the production of Sicilian sparkling wine**

Not everyone is aware that sparkling wine has been produced in Sicily since the last century and today some 6 methods of sparkling wine production exist; moreover, two regional brands enjoy Denominazione di Origine status.

There are 21 businesses that market at least one type of sparkling wine and collectively they market some 33 different labels from a single grape variety (66%) generally native to the area, among which Nerello Mascalese and Zibibbo are the most consumed.

Sparkling wines are produced in businesses that fall into five of the 9 Sicilian provinces mainly concentrated in Trapani and Catania.

The most prevalent method of production is the Charmat method which, whilst requiring higher set up costs, allows for faster production time in comparison to traditional methods (adopted only in certain cases), that require longer time and a higher level of technical ability.

Some firms use both methods, but this occurs in those cases in which the successive phases of production of the basic wine are entrusted to a third party which takes care of the remaining production.

The regional production has a net prevalence of brut types (sugar content less than 15 grams/litre) and extra dry (standard sugar content between 12 to 20 grams/litre).

The production measured in numbers of bottles ranges from a minimum of 5000 to a little over 100,000 bottles annually, with distribution levels showing a prevalence of modestly sized businesses; 31.58% of businesses produce up to 5000 bottles; 22.32% produce a bottle quantity of between 15,000 and 50,000 and, only 5.6% of the businesses had a production level higher than 100,000 bottles.<sup>3</sup>

The Sicilian production is 70% destined for the local and national markets with the remainder sent mainly to European markets (Germany, Switzerland, Belgium, etc.) whilst a small portion is directed to the American markets (Canada and the United States) and the Asian market (Japan).

## 2 Method and materials

The objective of our research is to collect information about possible market opportunities for Sicilian sparkling wines, for comparing them to those produced in other Italian regions well known for sparkling wines production. Therefore, we carried out an “*experimental*” survey on a sample of consumers to know their opinion about Sicilian sparkling wines. In particular we wanted to carry out a “*blind*”<sup>4</sup> wine tasting (effectively a “sensory” tasting) of some Sicilian sparkling wines, to have consumers’ opinions about the taste of those wines, the place of purchase and their willingness to pay for them.

### 2.1 Analysis of Simple Correspondence

We thought it was appropriate to use a “mixed” sample, consisting, for the most part, of special consumers classified as “*experts*” and, for the minor part, of ordi-

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<sup>3</sup>Data reference 2009

<sup>4</sup>In technical terms (of wine journalists, experts or stewards), the definition “degustazione alla cieca” or “blind tasting” is where different wines of the same type are compared, served with the labels and bottles masked, so as not to reveal the producer’s name.

nary consumers classified as “*non experts*”. The mixed sampling composition was chosen to obtain realistic information on taste, price, and point of purchase.

For this aim we applied a “stratified sampling” scheme, using as Population ( $N = 1000$ ) the members of the “National Organisation of Wine Tasters” (“Organizzazione Nazionale Assaggiatori di Vino” – O.N.A.V.) in 2009. We noticed that this Population already consisted of two Strata: 950 ( $N_1$ ) members, who had attended the course for “wine tasters” (“experts”) and 50 ( $N_2$ ) new members or “non experts” ( $N_1 + N_2 = N$ ). We determined, through a “reasoned choice” of the typical elements of the Population, the amount of “experts” (2/3) and of “non experts” (1/3) that should be part of the sample<sup>5</sup>. Because the total sample size was  $n = 75$ , the two sample sizes,  $n_1$  and  $n_2$ , were randomly extracted, obtaining respectively from the first Stratum ( $N_1$ ), a partial sample of size  $n_1 = 50$  and from the second Stratum ( $N_2$ ) a partial sample of size  $n_2 = 25$  ( $n_1 + n_2 = n$ ).

The 75 individuals of the sample, for each sparkling wine tasted from time to time, had to give a judgement about the taste, the price and the point of purchase.

With regard to the sparkling wines selected for the trial, we choiced, with the assistance of an expert<sup>6</sup>, five sparkling wines (also called later “spumanti”), and in particular four different types of Sicilian sparkling wines<sup>7</sup>, and one spumante brut that was not Sicilian as a point of comparison<sup>8</sup>.

For the interviews we used a questionnaire, given to the respondents, specifically structured for carrying out a “blind tasting”. This questionnaire, was organized to collect the opinion of the respondents about the five different sparkling wines, after having tasted them one after the other without knowing the brand and the label. This questionnaire contained 3 different forms for each sparkling wine tasted. On the first form, the sample was asked to give a judgement, based on personal opinion, to each spumante tasted, selecting one of the choices previously pre-coded in the form (the pre-coded choices were the same of the “evaluation forms for wines’ sensory analysis”, used by the O.N.A.V. during competitions to assign awards to wines). On the second form the sample of consumers screened was asked to give a price (chosen among 5 different range of pre-coded prices, contained in the questionnaire) to the tasted sparkling wines, on the basis of the

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<sup>5</sup>This choice was made because, using a Stratified-proportionate sampling schema, the size of  $n_2$  appeared too small.

<sup>6</sup>Dott. Giovanni Giardina, Winemaker, Vice President of the “Organizzazione Nazionale Assaggiatori di Vino – O.N.A.V.” Italy (National Organization of Wine Tasters), Viale Regione Siciliana n. 2156 Palermo –Italy; [onavsiciliagiardina@virgilio.it](mailto:onavsiciliagiardina@virgilio.it); was the moderator of the *focus group* and oversaw the wine tasting ..

<sup>7</sup>1 brut of medium quality, 1 brut of low quality, 1 rosé of medium quality and 1 sweet wine of good quality, coded respectively as BRUT 1, BRUT 2, ROSE’ and DOLCE),

<sup>8</sup>1 brut of high quality and of strong brand coded as SPUMANTE TEST).

sensory appeal (bouquet, appearance, taste). On the third form the sample was asked to select, among 5 different pre-chosen purchase places, the ideal one where to buy each of the tasted wines. We then compiled three matrices of data from qualitative variables: the first composed of the 5 sparkling wines examined and the 5 judgements given; the second one with the 5 sparkling wines and the 5 price categories; the third one containing the 5 sparkling wines and the 5 purchase places. The Simple Correspondence Analysis applied to the matrices, provided interesting information about respondents' opinions on Sicilian sparkling wines.

## 2.2 Focus Group

For the Focus Group (FG) we used the same "stratified sampling" schema previously described in the paragraph above and, by a "**random sampling**," we chose  $n = 10$  individuals from the sample, ( $n_1 = 50$ ), extracted from the Stratum of "experts" ( $N_1 = 950$ ). The ten "participants" to the Focus Group were screened according to the following characteristics: (gender) 50% males and 50% females, (age range) 30-65 years old, (education) medium/high level of education, (job profile) full time employed and free professionals.

For the FG we prepared a proper questionnaire to know, after discussion, the opinion of the group about each sparkling wine tasted during both the first and the second "blind tasting session".

In particular, the questionnaire, compiled by researchers, was structured in such a way as to check if the FG' opinion, after the first tasting, would change during the second tasting session, where the group was influenced by the expert. The respondents provided an order of preferences of the five sparkling wines tasted over the two sessions of tasting, both before and after having showed them the bottles and let them analysed the labels. This questionnaire also contained three different forms, the first one for the judgment on taste, the second one for the price and the third one for the point of purchase.

## 3 Simple Correspondence Analysis

The Simple Analysis of Correspondence is a technique of Multivariate Analysis that consists in extracting a graphical representation of rows and columns of a *contingency table* in the same bi-dimensional space. This result is obtained by assigning numerical "scores" to rows and columns of the data<sup>9</sup> matrix; the scores highlight the interrelation between rows and columns and are ascribed to a "corresponding" unit, in a way that the rows and columns can be represented in the

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<sup>9</sup>Related to qualitative variables.

same space. The analysis of correspondence aims to determine the “structure” of the eventual dependence between the row variables and the column variables. This because it’s possible that only some row variables are linked to the column variables, or else that there could be an interactive link so that variables together determine the frequency of verifying of certain modes placed in the other way. In our case we wanted to apply the SCA to the three contingency tables represented respectively by the variables “Types of sparkling wine”/“Judgment on Taste”, “Types of sparkling wine”/“Price” and “Types of sparkling wine”/“Place of buying” with the aim to find the greatest possible amount of information to study the potential market for Sicilian sparkling wines compared to those produced in other regions with a stronger tradition of production. In particular we wanted to study the structure of the general representation between the two variables observed, from time to time, and show the most important aspects identifying the main axis of the inertia<sup>10</sup>. We decided to start analysing, for each application, firstly the more important results of the processing and then to give a comment of the same.

### 3.1 Application 1 – “Types of sparkling wine”/“Judgment on Taste”

With the first processing we wanted to study the correspondence between the variables “type of sparkling wines” and “judgment on taste”.

#### 3.1.1 Results of data processing

In this case (table 1) we observe that, “Dimension 1” shows the 64.2% of the *totale inertia*, whilst “Dimension 2” shows the 31.9 %<sup>11</sup>. We also can see (table 2), that the contribution of the point to the inertia for the dimension also show that the types SPUMANTE TEST and ROSE’ are *dominant* in the first dimension, with a contribution, respectively, of 33.6% and of 35.9%, that together represent the 69.5% of the total inertia. Whilst in the second dimension the BRUT 1, (37%) and the ROSE’, (30.7%) were dominant, with a contribution equal to 67.7% of total inertia. Moreover, among the column points (table 3), the judgment “Excellent” contributes for the 64% of the inertia, only for the first dimension. For the second dimension the judgement “Very poor” contributed for the 62.8%.

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<sup>10</sup>As we know the inertia can be interpreted as the dispersion of profiles in a multi-dimensional space, for which, the greater the value of inertia, the more points will be distributed on the graph. Inertia, therefore, is affected by the distribution of the row (or column) profiles between the mode of the variable: if the profiles are different the value of the inertia will be elevated, and on the contrary, if the profiles are similar between themselves the value will be low.

<sup>11</sup>These values (0.64 e 0.32) can be interpreted as the values of the coefficient of correlation between the points of rows and columns.

Table 1: Proportion of Inertia (Types of sparkling wines-Judgment on taste)

Dimension	Proportion of Inertia	
	Explained	Cumulated
1	,642	,642
2	,319	,962
3	,035	,996
4	,004	1,000
<b>Total</b>	1	1,000

Table 2: Summary Statistics for the row points (Types of sparkling wines-Judgment on taste)

Types of sparkling wines	Values in the Dimension		Inertia	Contribution of row points to Inertia of the Dimension	
	1	2		1	2
<b>BRUT 1</b>	,018	,528	,009	,000	<b>,370</b>
BRUT 2	,384	,331	,010	,138	,145
<b>SP.TEST</b>	-,599	-,011	,016	<b>,336</b>	,000
<b>ROSE'</b>	,620	-,481	,023	<b>,359</b>	<b>,307</b>
DOLCE	-,423	-,367	,012	,167	,178
<b>Total</b>			,071	1,000	1,000

In table 2 and Tab. 3, the values in the dimension, of row and column, are the coordinates of the row and column points of the BIPLLOT (figure 1).

From the Biplot (figure 1<sup>12</sup>) we can clearly see that the sparkling wines “ROSE” and BRUT 2 are separated from the “SPUMANTE TEST” and the “DOLCE” (the sweet sparkling wine) (Tab. 2); similarly the group of sparkling wines “BRUT 1”, “BRUT 2” and “SPUMANTE TEST” is separated from the sparkling wines “ROSE” and “DOLCE” (sweet sparkling wine).

From the output of results we can observe the percentage of judgement given

<sup>12</sup>“Gusto” means “Taste”, “Marche” means “Type of sparkling wine”, “Ottimo”, “Buono”, “Sufficiente”, “Mediocre” e “Scarso” are, respectively “Excellent”, “Good”, “Sufficient”, “Poor” and “Very poor”.

Table 3: Summary statistics for the column points (Types of sparkling wines-judgment on taste)

Judgment on taste*	Values in the Dimension		Inertia	Contribution of column points to Inertia of the Dimension	
	1	2		1	2
<b>1 - SCARSO</b>	,841	-1,406	,022	,159	<b>,628</b>
2 - MEDIOCRE	,786	-,020	,009	,185	,000
3 - SUFFICIENTE	,063	,359	,006	,005	,246
4 - BUONO	-,046	-,007	,001	,005	,000
<b>5 - OTTIMO</b>	-1,651	-,610	,033	<b>,646</b>	,125
<b>Total</b>			,071	1,000	1,000

\* 1 = min (SCARSO), 5 = max (OTTIMO)

to each single sparkling wine tested (row profiles). In fact for “BRUT 1” from the data output the result is that we had the majority of judgements “Good” (57.3%) and “Sufficient” (33.3%) and few judgements “Poor” (5.3%) , “Excellent” (2.7%) and “Very poor“ (1.3%)”. For “BRUT 2” we obtained the judgment “Good” in 52.0% of cases, “Sufficient” in 33.3% of cases, “Poor” in 9.3%, “Very poor” in 4% and “Excellent” in 1.3% of cases; whilst the “SPUMANTE TEST” received the 53.3% of “Good”, 29.3% of “Sufficient”, 10.7% of “Excellent”, 4% of “Poor” and 2.7% of “Very poor”. For the “ROSE” 53% of the sample considered that this tasted “Good”, 25.3% “Sufficient”, 10.7% “Very poor”, 9.3% “Poor” and 1.3% “Excellent”. While the “DOLCE” (sweet sparkling wine) received many “Good” (58.70%) and then “Sufficient” (22.7%), “Excellent” (9.3%), “Very poor” (5.3%) and “Poor” (4.0%).

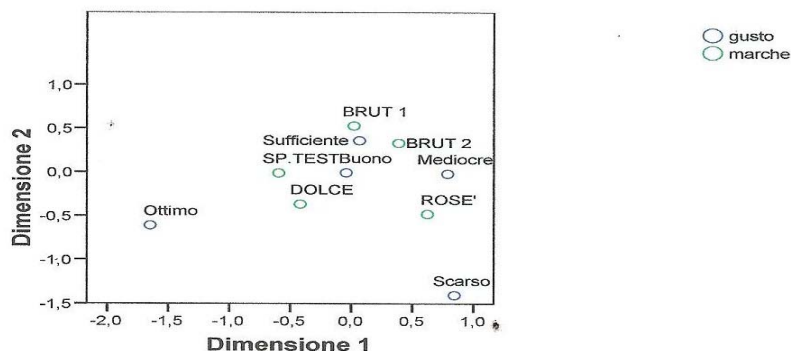
### 3.1.2 Comments

From the figure 1 and by analysing the data obtained it is possible to give interesting comments on the results.

We observe that respondents have taken a clear position in giving a score to the sparkling wines tasted, in fact they totally separated the spumante “BRUT 2” and the “ROSE” from all the others giving them the judgement of “Poor” and “Very poor”. With regard to the other sparkling wines the “BRUT 1” received a positive judgment (“Sufficient” in the majority of cases), whilst the “SPUMANTE TEST”



Figure 1: BIPLLOT



and the “DOLCE” positioned the closest to “Good” and “Excellent”. Moreover, the low quality of the “BRUT 2” (which was the worst sparkling wine among the brut wines chosen), among the other Sicilian sparkling wines chosen was noted. Moreover, the sweet spumante was the preferred one by the sample for taste. The “Spumante Test” (not Sicilian), of high quality, was the most appreciated brut. However respondents had different opinions about the Rosé spumante.

These findings can be confirmed if we observe, from figure 1, that there is a net separation between the two spumanti “DOLCE” and “ROSE” from the rest, showing that these two spumanti were considered to have characteristics which caused a divergence of opinion more than the others for their innate peculiarities of sweet and rosé sparkling. Moreover, notwithstanding this distinction due to type, there remains a difference of judgement, with the sweet in a position nearer to the “Excellent” judgement, whilst the rosé was less appreciated, being positioned nearer the “very poor” judgement. Finally, with regard to the second spumanti group, the respondents, also in this instance, judged the Spumante Test as the most enjoyable.

### 3.2 Application 2 – “Types of sparkling wine”/“Price”

In this case we wanted to know, according to the opinion of consumers interviewed, the ideal price for each of the spumanti tasted, on the basis of the judgement given on just the sensory characteristics (bouquet, taste, colour, perlage, etc.) and without knowing the brand. The objective was to understand if the respondents would be able to evaluate each chosen wine matching it to just one price considered to be the “ideal” price without taking into account the perceived value of the brand,

or of the area of production of the spumante (or the denomination of origin).

### 3.2.1 Results of processing

We observe that (table 4) “Dimension 1” expresses, alone, the 91.0% of the *Total Inertia*, whereas “Dimension 2” only 8.2 %.

Table 4: Proportion of Inertia (Types of sparkling wines-Prices)

Dimension	Proportion of Inertia	
	Explained	Cumulated
1	,910	,910
2	,082	,992
3	,008	1,000
4	,000	1,000
<b>Total</b>	1,000	1,000

The contribution of the point to the inertia shows, among others, that the SPUMANTE TEST is *dominant* in the first dimension (table 5), with a value equal to the 62.2% of the inertia, followed by the BRUT 2 with 23.0%. Whilst, in the second dimension the dominant types of sparkling wines are the ROSE’ (51.4%) and the DOLCE (37.7%). Moreover between the column points, only for the first dimension, the price range of 15-18 euro (table 6) accounted for 70.9% and that of 7-10 euro for just 25% of the inertia. For the second dimension the price range of 19-22 euro accounted for 44.3%.

From the Biplot (figure 2<sup>13</sup>) we observe a separation between the group “Dolce” and “Spumante Test” from the others; whilst we observe that the group of sparkling wines “BRUT 1”, “BRUT 2” and “DOLCE” are separated from the “SPUMANTE TEST” and “ROSE”’.

Also in this case, from the output of results, it is possible to evaluate the percentage, attributed to each single spumante tested, according to the variation of price range (row profiles). In fact for BRUT 1 61.3% of respondents were willing

<sup>13</sup>“Prezzo” means “Price”.

Table 5: Summary Statistics for the row points (Types of sparkling wines-Prices)

Types of sparkling wines	Values in the Dimension		Inertia	Contribution of row points to Inertia of the Dimension	
	1	2		1	2
BRUT 1	-,268	-,019	,005	,041	,001
<b>BRUT 2</b>	-,631	,247	,029	<b>,230</b>	,117
<b>SP.TEST</b>	1,039	-,129	,075	<b>,622</b>	,032
<b>ROSE'</b>	-,366	-,518	,015	,077	<b>,514</b>
<b>DOLCE</b>	,226	,419	,008	,029	<b>,337</b>
<b>Total</b>			,132	1,000	1,000

to pay 7-10 euro, the 26.7% 11-14 euro, the 8% 15-18 euro, the 2.7% 19-22 and the 1.3% 23-26. For the BRUT 2 the 72.0% were willing to pay 7-10 euro, the 22.7% 11-14 euro, the 2.7% 15-18 euro, the 1.3% 19-22 and the 1.3% 23-26. For the SP.TEST the 32% 7-10 euro, the 29.3% 11-14, the 30.7% 15-18 euro, the 5.3% 19-22 and the 2.7% 23-26. For the spumante ROSE' the 58.7% of those interviewed considers one should pay 7-10 euro, the 32% 11-14 euro, the 4% from 15-18 euro to 19-22 euro, whilst the 1.3% 23-26 euro. Finally for the DOLCE the 53.3% were willing to pay 7-10 euro whilst the 25.3% 11-14, the 18.7% 15-18 euro and the 1.3% from 19-22 to 23-26 euro. Making an *exception* for the SP.TEST, all of the other sparkling wines had an upper cost limit that was judged to be in the category of 11-14 euro.

### 3.2.2 Comments

From the results obtained from the processing and examining the graphs (figure 2), we can do some interesting observations on the price indications for sparkling wine. In fact, the sparkling wines that the tasters would pay the most are the "DOLCE" and the "SP. TEST", although not knowing a precise price for the "SPUMANTE TEST", as they don't not know the brand. Moreover, between the two, the "Spumante Test" finds acceptance for the higher price range (15-18, 19-22 and 23-26), being the most closely linked to the highest price, which is, in the market, the price of some champagnes. The "Dolce", compared to the "Spumante Test", receives a price preference that places it in the lower price categories. The sample seemed rather more sure in grouping all of the remaining sparkling wines to

Table 6: Summary Statistics for the column points (Types of sparkling wines-Prices)

Prices in euros	Values in the Dimension		Inertia	Contribution of column points to Inertia of the Dimension	
	1	2		1	2
<b>7 – 10</b>	-,395	,153	,031	<b>,250</b>	,125
11 – 14	,064	-,328	,004	,003	,280
<b>15 – 18</b>	1,387	,346	,087	<b>,709</b>	,147
<b>19 – 22</b>	,555	-1,255	,008	,026	<b>,443</b>
23 – 26	,499	-,205	,002	,011	,006
<b>Total</b>			,132	1,000	1,000

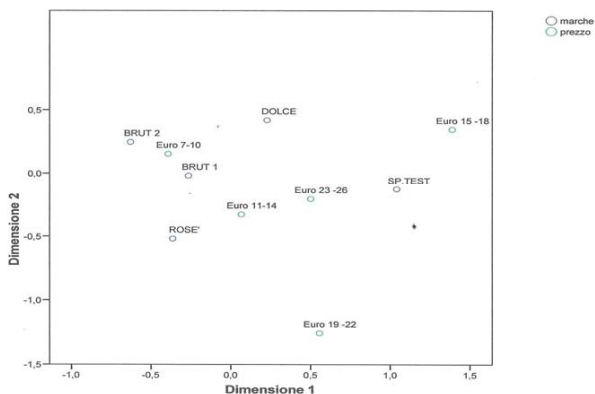
the lowest price range (7-10 euro and 11-14 euro). The BRUT 2 however, always receives a percentage of the judgement that brings it close to the lowest price category (7-10). The ROSE' is also classified within this categories, probably due to the influence of the colour. In general, the price that is considered to be more applicable for a sparkling wine of medium/high quality is between 7 and 14 euro.

From figure 2 we have further confirmation. In fact the results show that, between the bruts, the one which everybody would pay less for was always the “BRUT 2” (which was closest to the 7-14 euro range), and the one that they would pay most for was always the “SPUMANTE TEST” (15-18 and 23-26), whilst we noted the consumers greatest uncertainty was attributing a precise price to the two sparkling “Dolce” and the “Rosé”.

### 3.3 Application 3 - Spumanti/Place

The third processing was aimed to know the relation existing between “type of sparkling wine” tasted and “place of purchase”, again on the basis of a sensory evaluation. This analysis completes the foregoing providing further interesting points of reflection.

Figure 2: BIPLLOT



### 3.3.1 Results of processing

In this case “Dimension 1” accounts for 92.7% of the *total inertia* (table 7), whilst “Dimension 2” just 4 %.

Table 7: Proportion of Inertia (Types of sparkling wines–Place of buying)

Dimension	Proportion of Inertia	
	Explained	Cumulated
1	,927	,927
2	,040	,967
3	,033	1,000
<b>Total</b>	1,000	1,000

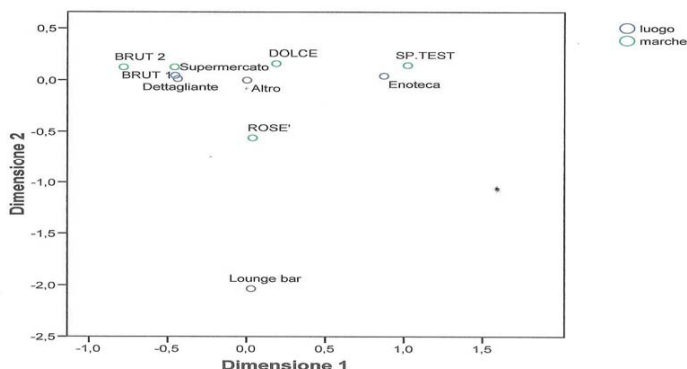
The contribution of the point to the inertia for the dimension shows among other things, that the SPUMANTE TEST and the BRUT 2 are *dominant* in the first dimension (table 8), which is equal to 54.8% and 32.3% respectively; whilst in the second dimension it is predominant just the ROSE’ with 79.8% of the inertia. Moreover, between the column points, for dimension 1, the “Wine shop” (Tab. 9) accounted for 65.8% of the inertia and the “Supermarket” just 26.5%; for dimension 2 the “Wine-Lounge Bar” assumed the highest value with 98% of the inertia.

Table 8: Summary Statistics for the row points (Types of sparkling – Place of buying)

Types of sparkling wines	Values in the Dimension		Inertia	Contribution of row points to Inertia of the Dimension	
	1	2		1	2
BRUT 1	-,460	,128	,017	,111	,041
<b>BRUT 2</b>	-,784	,127	,047	<b>,323</b>	,041
<b>SP.TEST</b>	1,022	,145	,081	<b>,548</b>	,053
<b>ROSE'</b>	,036	-,561	,005	,001	<b>,798</b>
DOLCE	,186	,162	,007	,018	,066
<b>Total</b>			,157	1,000	1,000

Also in this case the points of the rows and columns (tables 8 and 9) are the coordinates of the row and column points of the BIPLLOT (figure 3.3.1). From figure 3.3.1<sup>14</sup> we observe an initial separation between the group of wines “Brut 1” and “Brut 2” and the group of “Dolce”, “Spumante Test” and “Rosè” wines; for the place of purchase the group “Supermarket”, “Wholesaler” and “Wine shop” is separated from “Wine-Lounge bar”.

Figure 3: BIPLLOT



<sup>14</sup>“Luogo” means “Place of purchase”, “Supermercato”, “Dettagliante”, “Enoteca”, “Lounge bar” and “Altro”, mean respectively “Supermarket”, “Wholesaler”, “Wine shop”, “Wine-lounge bar” and “Other place”.

Table 9: Summary Statistics for the column points (Types of sparkling wines–Place of buying)

Place of buying	Values in the Dimension		Inertia	Contribution of column points to Inertia of the Dimension	
	1	2		1	2
<b>SUPERMARKET</b>	-,456	,045	,040	<b>,265</b>	,013
WOLESALER	-,440	,014	,015	,077	,000
<b>WINE SHOP</b>	,871	,042	,096	<b>,658</b>	,007
<b>WINE-LOUNGE BAR</b>	,027	-2,034	,006	,000	<b>,980</b>
OTHER	,000	,000	,000	,000	,000
<b>Total</b>			,157	1,000	1,000

If we consider the percentage of purchase preference for each sparkling wine in various places of purchase (Supermarket, wholesalers, etc.) (row profiles) we note that for the BRUT 1, 57.3% of consumers respondents (the greater percentage), would prefer to purchase it in the supermarket, 20% from the wholesaler and at the Wine shop, while 1.3% in Wine-Lounge Bar or other places. The BRUT 2 would be purchased at the supermarket (65.3%) and from wholesalers (21.3%), only 10.7% would purchase it in a Wine shop; and only 1.3% in a Wine-Lounge bar or another place. For the SPUMANTE TEST predominantly the Wine shop (62.7%), a good proportion at the Supermarket (24%), a minority (10%) from the Wholesaler and only 1.3% at the Wine-Lounge bar or another place. The 46.7% of those interviewed preferred to purchase the spumante ROSE' at the Supermarket, 33.3% in the Wine shop, followed by preferences of 14.7% for the Wholesaler and less than 5% for the Wine-Lounge bar and Other places. The Sweet sparkling wine reflects similar characteristics to the ROSE', in fact the 49.3% of respondents consider the ideal place of purchase to be the Supermarket, 38.7% the Wine shop, 9.3% the Wholesaler and 1.3% through a Wine-Lounge bar or other place.

### 3.3.2 Comments

By analysing figure 3.3.1 we can see that for the consumers interviewed the places considered more "ideal" for purchasing the sparkling wines tasted were the Wine shop and the Supermarket and/or Wholesaler, and that, in line with this, Supermarket and Wholesaler are represented within a space of two points very closed.

Moreover, the sample group gave a more specific opinion by linking each sparkling wine type to a different place. For example they judged that the “Spumante Test” was the one most likely to be purchased in a Wine shop, followed by the “Dolce”, probably because these two sparkling wines are the ones that gained the highest grades for taste. However, among the Sicilian bruts, the “BRUT 1” and “BRUT 2” were those which were grouped more closely to Supermarkets and Wholesalers. We note that Brut 1 is very closed to “Wholesalers” and that Brut 2, among all the rest, was the least appreciated and was closer to the Supermarket (maybe for the general opinion that at the Supermarket we can find, mostly, lower quality sparkling wines).

Finally, it is worth noting how the spumante Rosé was evaluated, also in this case, as a sparkling wine “differing” from the others. Respondents, on one side, judged this sparkling wine as not preferred, on the other side, they think it possessed, in colour, a certain character (that would place it closer to some rosé champagnes) which could raise its profile, thereby making the Wine bar the most ideal purchase point.

### **3.4 Conclusion of Simple Correspondence Analysis**

After having analysed the result from the individual processing, it is possible to have a general view from the consumers perspective of the potential impact Sicilian sparkling wines can have on the market. We can say that Sicilian sparkling wines, whilst not having yet acquired the intrinsic quality of character and taste required to be considered at the same level as a finer brand of north Italian sparkling wine, meets the taste of the consumers interviewed, who generally judged the taste positively (in fact the test group were able to see the difference between the Sicilian “Bruts” and the “Spumante Test” and also between the higher quality Sicilian “Bruts” and the ones of inferior quality). With regard to pricing, it results that the sample of consumers considered the most appropriate price for a sparkling wine to be between seven and fourteen euro, confirming that, regardless to taste, they were not willing to pay any more for a sparkling wine, taking into account that there are on the market also champagne wines at a price of 22-23 euro, even in the supermarket. Remaining with the theme of place of purchase, the supermarket appears to be the preferred place to purchase sparkling wine, as probably for most it is generally more accessible. The participants actually seemed inclined to go to the Wine shop for purchasing a more distinctive sparkling wine, because in this case the purpose is also to buy it as a present and not for personal use.

Among the sparkling wines tasted, those preferred by the consumer were the Sweet and the Spumante Test, the first because it is generally preferred by the



sample interviewed among the sparkling brut, and second because, among other bruts, it is superior for quality. However, this preference in terms of taste is not confirmed in relation to price or place. The motivation could be that the test group, whilst appreciating the sweet sparkling wine, is aware that normally the most valued sparkling wines are of the brut type. Such hypothesis is confirmed by the great difficulty of respondents to assign a unique price to the “DOLCE”, but because it was greatly to their taste, they positioned it at a higher price range (from 7 to 26 euro!). Finally regarding the Sicilian sparkling Rosé, it emerged that it has a market position almost “distinct” from that of the classic sparkling wines. In fact the consumers found it different from the other tasted, whether in terms of taste, place of purchase or in terms of price.

These results allow us to confirm that there could be a market for Sicilian sparkling wines, whether for brut ones, than for Sweet or Rosé ones, but that unfortunately these sparkling wines, are not good known. The “blind judgements”, were positive in terms of taste, identifying a potential for these spumanti that can have a market. On the other hand, it emerged that a consumer who does not know the sparkling wine he is tasting, regardless his own personal taste, tends to equate it to all the other standard sparkling wines on the market, when he has to assign a price level and a place of purchase. For this reason, if we want to exploit the potential of Sicilian sparkling wines, we need to think in terms of a more rigorous communication campaign, directed at consumers to raise their knowledge and appreciation for these products; and this is also confirmed further in the results of the Focus Group.

## **4 The Focus Group**

### **4.1 Introduction**

Wishing to understand the development prospects of sparkling wines produced in Sicily, some aspects seem particularly important, among which is the possibility of adjusting consumers qualitative judgement through tools such as communication, which could cause their levels of preference to grow.

To this end it was thought that the results of the correspondence analysis could be accompanied by additional information obtained using the methods of the Focus Group (FG), applied with particular shrewdness ways which differ from the usual pattern.

The method of the FG is based on the deliberations of a select group, coordinated by a moderator and focussing on a subject that requires in-depth knowledge.

In the FG the participants need to have a common interest, allowing them to

debate the proposed theme. In our case, they were chosen from within the sample taken as reference<sup>15</sup>, and so perfectly suited for the discussion.

The group was composed of 10 people (a *full group*, or a group of ample size) divided into equal numbers of men and women, with an average age of 46 years and with a level of education considerably high, as 99% possessed a degree and all were employed or freelance professionals .

## 4.2 The results

### 4.2.1 First session: sensory classification and link to acceptable pricing

At the beginning of the the moderator provided general information on Sicilian sparkling wines, giving special emphasis to the traditions of Sicilian wine production, the territorial areas of production, the special role of local grapes in their quality of character and further to highlighting aspects in a sparkling wine such as taste, bouquet, sugar content and perlage, etc.

Following this first speech of the moderator, the next phase led to a blind taste in which five different sparkling wines were submitted to the FG of which four were produced in Sicily and a fifth, inserted as a point of comparison and very well know at national level, that was called “Spumante Test<sup>16</sup>”.

The sensory analysis (blind taste) revealed that the spumante test was considered the best, and the FG was willing to pay a higher price (from 19 to 22 euro) , whilst for the four regional bottles, the one classed as best was the sweet sparkling wine for which they were willing to pay quite a high price (from 11 to 14); the remaining three sparkling wines, although having a clear distinction between them, were from a price perspective, considered equal.

Table 10: FG 1st Session - sensory judgment

<b>FG 1st Session: sensory judgment</b>	
Scale of preferences:	Willing to pay
1° - Spumante test	19 - 22
2° - Spumante dolce	11 - 14
3° - Spumante brut 1	7 - 10
4° - Spumante rosè	7 - 10
5° - Spumante brut 2	7 - 10

<sup>15</sup> $n = 10$  individuals randomly chosen from the sample  $n_1 = 50$  extracted from the Stratum of “experts”.

<sup>16</sup>The sparkling wines used for the FG were the same ones chosen for the ACS.

#### **4.2.2 Judgement on the external characteristics of the bottle and acceptable pricing**

After the blind taste, the moderator shows to the FG, in reverse order, the sparkling wines tasted and he describes the external characteristics of the bottles such as aesthetic aspects, shape and colour, cork and label with its information, production method, brand, etc.

Also in this second phase the FG after discussion compiled a new classification of preferences integrated to the price they were willing to pay for each bottle.

Respondents gave classification of preferences on external characteristics which was different to that after the sensory analysis, with the “spumante test” to the third position and the others in different positions respect to the first session, and similarly the price they were willing to pay was changed.

The two classifications show, however, how the FG was influenced by the moderator about how to appreciate a sparkling wine, and how to judge the external appearance of the bottle, label included.

Table 11: FG 1st Session - judgment on external characteristics (bottle and label)

<b>FG 1st Session: judgment on external characteristics (bottle and label)</b>	
<b>Scale of preferences:</b>	<b>Willing to pay</b>
1° - Spumante rosè	15 – 18
2° - Spumante dolce	15 – 18
3° - Spumante test	11 – 14
4° - Spumante brut 2	7 – 10
5° - Spumante brut 1	7 – 10

#### **4.3 Second session: sensory classification and ideal price**

After fifteen days there was the second session of the FG where the moderator began to point out some qualities the anonymous sparkling wines and some negative characteristics; after this introduction the FG carried out the blind taste, discussed with the moderator, commented and produced a list of preference with the price they would be willing to pay for each type tasted.

Also in this case, it is evident how the respondents were influenced by information given by the moderator because although the “spumante test” remained in the first position, the scale of preference for the others were all changed, this time considerably, as we can see in the table above.

Table 12: FG 2nd Session - judgment on taste

<b>FG 2nd Session: judgment on taste</b>	
Scale of preferences:	Willing to pay
1° - Spumante test	15 – 18
2° - Spumante brut 2	11 – 14
3° - Spumante rosè	11 – 14
4° - Spumante brut 1	7 – 10
5° - Spumante dolce	7 – 10

#### 4.3.1 Judgement on the external characteristics of the bottle and ideal price

With the next speech the moderator shows the bottles and point out the external characteristics, some of them positive and others negative, then the FG gave a classification on the external appearance as always, with the price they would be willing to pay for each bottle.

Table 13: FG 2nd Session - judgment on external characteristics (bottle and label)

<b>FG 2nd Session: judgment on external characteristics (bottle and label)</b>	
Scale of preferences:	Willing to pay
1° - Spumante rosè	15 – 18
2° - Spumante test	15 – 18
3° - Spumante dolce	15 – 18
4° - Spumante brut 1	11 – 14
5° - Spumante brut 2	7 – 10

We have to take into consideration that the influence of communication, even if only in the form of “persuasive speech” is able to change the final decision consumer, and even make him express a different evaluation of the same product; however this happens only with specifically targeted products, whilst it appears not to have influenced the “spumante test” which was always perceived as the best.

#### 4.4 Conclusions of the Focus group: the comparison between the two sessions

With regard to the price the influence of the moderator’s speech made respondents change their willing to pay for the spumante test; for the other Sicilian sparkling

wines they also changed their opinion about the sensory characters, reversing the list of preferences especially regarding the sweet sparkling wine and the brut 2.

Table 14: Comparison of willing to pay based on judgment on taste

<b>Comparison of willing to pay based on judgment on taste</b>			
Scale of preferences:	Willing to pay:	Scale of preferences:	Willing to pay:
1st	1st	2nd	2nd
1° - Spumante test	19 - 22	1° - Spumante test	15 - 18
2° - Spumante dolce	11 - 14	2° - Spumante brut 2	11 - 14
3° - Spumante brut 1	7 - 10	3° - Spumante rosè	11 - 14
4° - Spumante rosè	7 - 10	4° - Spumante brut 1	7 - 10
5° - Spumante brut 2	7 - 10	5° - Spumante dolce	7 - 10

Diverse situations were also evident when we consider the judgements given based on the external characteristics.

Table 15: Comparison on willing to pay based on external characteristics (bottle, label, ecc.)

<b>Comparison on willing to pay based on external characteristics (bottle, label, ecc.)</b>			
Scale of preferences:	Willing to pay:	Scale of preferences:	Willing to pay:
1st	1st	2nd	2nd
1° - Spumante rosè	15 - 18	1° - Spumante rosè	15 - 18
2° - Spumante dolce	15 - 18	2° - Spumante test	15 - 18
3° - Spumante test	11 - 14	3° - Spumante dolce	15 - 18
4° - Spumante brut 2	7 - 10	4° - Spumante brut 1	11 - 14
5° - Spumante brut 1	7 - 10	5° - Spumante brut 2	7 - 10

In particular, findings shows a relevant change of opinion every time the respondents became aware of brands and of other information.

The “spumante test” was always on the first position for the judgments based on taste instead it declined its position, as preferences and willingness to pay, when the judgments were based on external characteristics.

In general it emerged that the producers name is very important for the consumer as it expresses the quality of the product.

The shape of the bottle was an important factor, because, for the sparkling wine consumer, it reflects the idea of luxury and refinement.

It must be emphasised that an elegant bottle with an understated label is more likely to attract the consumer looking for a quality product, because it emerged that the more ostentatious the label and it’s accessories, the more the contents are

regarded as being of medium to low quality.

## **5 Conclusion**

The current production of Sicilian sparkling wines is directed to a niche market but it is a chance for producers to differentiate their supply, therefore the objective of this scientific paper was to know possible growth opportunities for Sicilian sparkling wines.

To achieve this goal, we firstly analysed the current situation of regional production of sparkling wines and then we applied the method of Simple Correspondence Analysis (SCA) to data collected through an *experimental survey* on a sample of consumers participating to a *two-session blind tasting* of some Sicilian sparkling wines. Moreover we integrated the findings of the SCA with the ones of a Focus Group (FG) conducted over a sub-sample especially screened.

The findings of the SCA and FG enable us to assert that respondents had a clear view of the products tasted. In particular, about the taste, they liked the Sicilian sparkling preferring more the sweet wine and some bruts (with a taste similar to the “spumante test”). These sparkling wines were considered good and excellent. On the other side, respondents said they did not like much the sparkling rosé, maybe because they do not perceived it as a sparkling wine, because of its color.

About the willingness to pay we can say that it depends on respondents preferences based on taste and external characteristics of bottles, however, they are not willing to pay more than fourteen euros for a sparkling wine, even if they think it is a good quality product.

Respondents also believe that wine-shops are the best place where to buy a sparkling wine, especially if it is of good quality. On the contrary, the less favourite sparkling wines would be purchased in a supermarket.

It is interesting to observe that respondents, when influenced by a moderator, changed their preferences about the taste, the external characteristics and about the ideal price. This means that a good communication campaign, carried by producers, could be a good support for them to promote Sicilian sparkling wines and inform consumers about the qualities of these products.

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