

Wine purchase and consumption behaviour of young adults in Portugal: Is age a differentiation factor?

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1. Introduction

Wine production has a considerable relevance in the Portuguese Agricultural Sector. In fact, wine production accounts, on average (2005-2007), for 13.7 % of total Agricultural Production (INE, 2008 and INE, 2007) and wine is the Portuguese main agri-food export with 20.5% in 2006 (GPP, 2007a). With an average production around 7 million hl (campaigns 2002/2003 to 2004/2005), exports represent almost 40% of this production, while imports are still marginal (GPP, 2007b). This means that wine consumption in Portugal is mainly provided by domestic production, a common feature of all EU main producing countries.

Wine consumption in Portugal has been decreasing, since the beginning of the eighties (Duarte, 1991). This trend is similar to the one observed in other main EU producing countries, France, Italy and Spain (Smith and Miltry, 2007).

While wine and alcoholic drinks' *per capita* consumption are decreasing, non-alcoholic drinks registered a sharp increase in Portugal, as a result of consumers' health concerns, driving constraints, and industry marketing strategies based on innovation and development of new products. In fact, from 1994 to 2003, average annual growth rates were negative for wine and beer (respectively -2.3% and -0.3%), while for non-alcoholic drinks were positive and high (7.3% for water, 5.9% for soft drinks and 9.9% for juices).

In a highly competitive environment it is important for wine producers, in order to reinforce their market orientation, to know better how Portuguese consumers choose the wine, what the relevant attributes for quality perception are, and what kind of consumer segments can be identified.

Of particular interest was to identify how young adults (those with less than 35 years of age) perceive wine extrinsic attributes and how their motives/attitudes towards wine consumption differ from elder consumers. These younger consumers are at present mainly targeted by non-alcoholic drinks' industries but they may be a promising target also for the wine industry, as far as its marketing efforts are responsible and based on a sound knowledge of the particular needs of this type of consumers.

2. Methodology

With this research we tried to identify, the importance of extrinsic attributes and the main sources of information for wine purchase decision, the motives/attitudes, the frequency and the occasions of consumption, and how these different issues relate to consumer's age.

For this purpose, and due to resource and time constraints, a survey was implemented, using the internet (July/August, 2008), and the answers of a convenience sample (all those over 16 years of age who desired to participate) of 1160 respondents were analysed.

The questionnaire used mainly close-ended questions in order to obtain information on certain demographic variables (age, gender, education level, income, living region), as well as behavioural variables (frequency of consumption, buying places, attributes relevant for choice), motives/attitudes towards wine consumption and knowledge variables.

The identification of choice criteria, as well as the main motives/attitudes towards wine

consumption and subjective knowledge variables was based on literature review (namely Boulet and Laporte, 1997, Losckshin and Hall, 2003, d'Hauteville, 2003, AESBUC, 2003, ONIVINS, 2005, Serra and Vieira, 2008, and Goodman *et al*, 2008).

A classification similar to the one of the ONIVINS/INRA surveys (ONIVINS, 2005) was used, allowing the separation of three groups: regular consumers (everyday or almost everyday), occasional consumers (once or twice a week or more rarely) and non-consumers.

Using the data from the survey, on a first stage, analysis was based on independence tests and ANOVA, in order to test if significant differences could be found among different age classes. Detailed results of this stage of the analysis can be found in Madeira (2008).

On a second stage factor and cluster analysis were implemented in order to obtain consumer segments, based on factors identified with motives/attitudes towards wine.

Consumer's profiles were established based on socio-economic characteristics and consumption frequency.

3. Results

3.1. Sample Characteristics

The sample of 1160 respondents is almost evenly split between man (53%) and women (47%). All age classes over 16 are represented, but on average, respondents are relatively young. The most represented age class is from 25 to 35 years, with almost 39% of respondents. Concerning household income classes and living region of the respondents, there is some bias towards higher income classes and the region of Lisbon. However the main discrepancy concerns the educational level. In fact, almost all the respondents (99%), have concluded at least 12 years of education, while in the Portuguese population as a whole, this share is only 24%, and in those aged from 25 to 34 years, the age class most represented in the sample, the proportion is 46%¹. So this sample is not representative of the Portuguese population, but may be a good representation of wine consumption behaviour of younger and educated wine consumers. With this in mind, our results should be interpreted with caution, as they are just one contribution to the analysed issues.

Table 1 – Demographic and socio-economic characteristics of the sample

		%
Gender	Female	47.0
	Male	53.0
Age	15 – 24	12.8
	25 – 34	38.5
	35 – 44	20.0
	≥ 45	28.7
Income	Level 1	36.7
	Level 2	24.3
	Level 3	32.5
	Level 4	6.5
Region	North	28.5
	Centre	7.4
	Lisbon	49.0
	Alentejo	12.4
	Other	2.7

¹ This is certainly due to the way the survey was conducted.

Most of the respondents are occasional consumers (73%). Regular consumers represent 25% and only a few respondents declared never consuming wine. Wine is more frequently consumed at dinner time (59%), week-ends (55%) and particularly special occasions (75%).

For the whole sample the four main choice criteria (importance scores ranged from 1 = not at all important to 5 = extremely important) are: the region of origin (3.8), having a cork stopper (3.6), the price (3.6) and the harvest year (3.1).

Almost all the respondents recognize that the importance of choice criteria may change with consumption occasion, and for 77 % of them, price is not a good quality cue for wine.

Clearly, most important information sources are (importance scores ranged from 1 = not at all important to 5 = extremely important): previous consumption experience (4.1) and recommendations from family and friends (3.6).

Considering motives/attitudes towards wine (Likert scale ranging from 1 = strongly disagree to 5 = strongly agree): “I like the taste of wine”, “Wine goes well with meals”, “I like to know and evaluate wine quality”, “Wine moderate consumption favours health”, “Wine consumption favours conviviality” and “Wine helps to relax”, all had a high level of agreement (average scores between 3.5 and 4.2).

3.2. Results from independence tests and ANOVA

Results from the first stage of the analysis, suggest that age is a relevant differentiation factor of consumption frequency, consumer’s choice, quality perception and motives/attitudes towards wine. Detailed results of this stage of the analysis can be found in Madeira (2008).

Table 2 – Wine consumption frequency by age class

	Age classes			Total
	15 - 24 years	25 - 34 years	≥35 years	
Never	5.4	3.1	1.1	2.4
Rarely or occasionally	63.8	48.4	30.1	41.5
Once or twice a week	24.2	35.4	29.7	31.2
Everyday or almost everyday	6.7	13.0	39.1	24.9
Total	100.0	100.0	100.0	100.0

$\chi^2 = 60,951$ ($p < 0,001$).

Youngest consumers are mainly rare or non-consumers, while elder consumers are more frequently every day or almost every day consumers (Table 2).

As mentioned above, region of origin, cork stopper and price, are considered by the respondents, the three more important extrinsic attributes for choice decision (Table 3).

However, elder consumers (35 years or more) give more relevance to attributes like region, grape variety, DOC, oenologist, harvest year and cork stopper. On the opposite, younger consumers are those who attribute more relevance to the front label, and to brand and price (scores with no significant differences among age classes).

Table 3 – Choice criteria: mean of importance score by age class

	Age classes			Total	F ANOVA	(p-value)
	15 - 24 years	25 - 34 years	≥35 years			
Region of origin	3.56 ^a	3.82 ^b	3.85 ^b	3.81	4.329	0.013
Grape variety	2.83 ^a	3.09 ^b	3.13 ^b	3.09	3.267	0.039
Brand	3.11	3.19	3.05	3.11	2.021	0.133
Price	3.62	3.55	3.56	3.56	0.219	0.803
DOC	2.53 ^a	2.74 ^a	2.98 ^b	2.85	9.180	< 0.001
Oenologist	1.95 ^a	1.94 ^a	2.21 ^b	2.08	8.464	< 0.001
Label	2.57 ^a	2.53 ^a	2.28 ^b	2.40	9.496	< 0.001
Back-label	2.75	2.66	2.73	2.71	0.687	0.503
Awards	2.56	2.67	2.65	2.65	0.537	0.585
Harvest year	2.92 ^a	3.09	3.20 ^b	3.13	3.567	0.029
Other packages	2.06	1.97	2.07	2.03	0.824	0.439
Cork stopper	3.39 ^a	3.49 ^a	3.70 ^b	3.59	5.209	0.006

Post Hoc test: mean scores in the same row with unlike letters (a, b or c) are significantly different at a level of 5%.

Previous consumption experiences, followed by suggestions of family and friends are the main information cues for all age classes (Table 4).

Table 4 – Information sources: mean of importance score by age class

	Age classes			Total	F ANOVA	(p-value)
	15 - 24 years	25 - 34 years	≥35 years			
Consumption experience	4.10	4.19	4.06	4.11	2.891	0.056
Family and friends	3.69 ^a	3.74 ^a	3.51 ^b	3.61	9.419	< 0.001
Experts	2.85	3.03	2.96	2.97	1.405	0.246
Label and back-label	2.78	2.75	2.82	2.79	0.609	0.544
Advertising	2.31 ^a	2.29 ^a	2.07 ^b	2.18	10.771	< 0.001
Internet	2.03	2.15 ^a	1.94 ^b	2.03	5.156	0.006

Post Hoc test: mean scores in the same row with unlike letters (a, b or c) are significantly different at a level of 5%.

Advertising and internet are considered not very important by all age classes. However, younger consumers (particularly those with less than 25 years) are those who attribute relatively more relevance to these sources of information.

Concerning motives/attitudes towards wine consumption (Table 5), “I like the taste of wine” is the more important reason to consume followed by the recognition that “Wine goes well with meals”, and third, “I like to know and enjoy wine quality”. It is worth to mention that for these three motives/attitudes we found significant differences between age classes. Despite being identified as the main three reasons for wine consumption, their relevance grows with respondent’s age.

Wine consumption as a factor of “social status” is more associated with young consumers (25-34 years old).

Table 5 – Motives/attitudes towards wine consumption: mean level of agreement by age class

Statements	Age classes			Total	F ANOVA	(p-value)
	15 - 24 years	25 - 34 years	≥35 years			
I like the taste of wine	3.84 ^a	4.22 ^b	4.36^c	4.24	19.863	< 0.001
Moderate consumption is good for health	3.69 ^a	3.80 ^a	3.93^b	3.85	5.751	0.003
Wine consumption favours conviviality	3.48 ^a	3.73 ^b	3.84^b	3.75	8.209	< 0.001
Wine goes well with meals	3.76 ^a	4.07 ^b	4.26^c	4.12	27.029	< 0.001
Wine consumption helps to relax	3.50	3.58	3.44	3.50	2.598	0.075
I like to know and enjoy wine quality	3.61 ^a	3.98 ^b	4.15^c	4.02	20.086	< 0.001
Wine is cheap	2.50^a	2.38 ^a	2.26 ^b	2.34	5.563	0.004
Wine is crucial for my lifestyle	2.00	2.14	2.23	2.17	2.814	0.060
Enjoying wine is a factor of social status	1.96 ^a	2.14^b	1.89 ^a	2.00	8.190	< 0.001
Wine consumption doesn't interfere with my driving ability	1.70 ^a	1.72 ^a	1.97^b	1.84	8.701	< 0.001
Wine consumption favours my professional performance	1.71	1.63	1.65	1.65	0.463	0.630
I prefer wine to other drinks	2.61 ^a	2.97 ^b	3.24^c	3.05	17.284	< 0.001

Post Hoc test: mean scores in the same row with unlike letters (a, b or c) are significantly different at a level of 5%.

3.3. Results from factor and cluster analysis

Factor analysis performed on the motives/attitudes influencing wine consumption allowed the identification of three factors (eigenvalues above one) explaining 59% of total variance (Table 6). These factors can be interpreted as follows:

Factor 1: variables with the highest contribution to this factor are, “I like the taste of wine”, “I like to know and enjoy wine quality”, “Wine goes well with meals” and “I prefer wine to other drinks”. This factor was named “Taste/Pleasure”.

Table 6 – Factor analysis on motives/attitudes variables

Statements	Factors		
	1 <i>Taste/ Pleasure</i>	2 <i>Conviviality</i>	3 <i>Personal performance</i>
I like the taste of wine	0.829	0.038	0.004
I like to know and enjoy wine quality	0.814	0.066	0.147
Wine goes well with meals	0.755	0.240	0.026
I prefer wine to other drinks	0.666	0.126	0.358
Wine consumption helps to relax	0.262	0.746	-0.115
Wine consumption favours conviviality	0.457	0.614	-0.043
Enjoying wine is a factor of social status	0.069	0.609	0.351
Wine is crucial for my lifestyle	0.338	0.502	0.474
Wine is cheap	-0.239	0.501	0.265
Wine consumption favours my professional performance	0.104	0.209	0.787
Wine consumption doesn't interfere with my driving ability	0.084	-0.024	0.748
Eigenvalue	2.835	1.931	1.762
Variance (%)	25.78	17.55	16.02
Cumulative variance (%)	25.78	43.33	59.35

n = 1092. Loadings were derived for each of these factors using a varimax rotation.

Bartlett's test for sphericity: $\chi^2_{55} = 3444.195$ ($p < 0,001$).

Kaiser-Meyer-Olkin measure of sampling adequacy: KMO = 0.817.

Factor 2: the items that loaded most heavily on this factor were “Wine consumption helps to relax” “Wine consumption favours conviviality”, “Enjoying wine is a factor of social status”, “Wine is crucial for my lifestyle” and “Wine is cheap”. Therefore this factor was named “Conviviality”.

Factor 3: including statements as “Wine consumption favours my professional performance” and “Wine consumption doesn't interfere with my driving ability”. This factor was named “Personal performance”.

Two step cluster analysis technique was used to identify segments of consumers according to these motive/attitude's factors.

The results show a four clusters' solution (Table 7 and Figure 1).

Cluster 1, with 25% of the sample includes respondents that evaluate factor “Taste/Pleasure” above average, and “Personal performance” and “Conviviality” below the average.

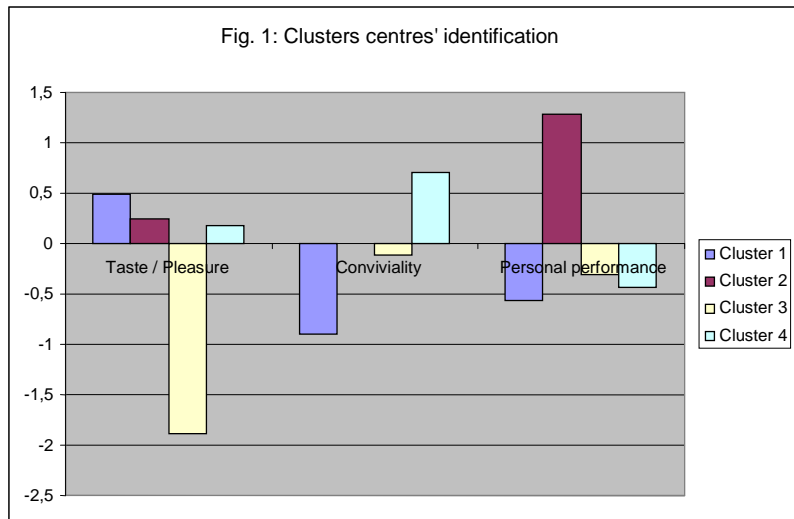
Table 7 – Clusters centres' identification

Motives/Attitudes factors	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Taste / Pleasure	0.49	0.24	-1.88	0.18
Conviviality	-0.90	0.00	-0.12	0.70
Personal performance	-0.57	1.28	-0.31	-0.44
Number of respondents	276	288	147	381
% of respondents	25.3	26.4	13.5	34.9

Cluster 2, with 26% of the respondents shows positive values for all factors, evaluating “Personal performance”, well above the average.

Cluster 3, with 14% of the sample, include those respondents who evaluate all factors below the average, particularly “Taste/Pleasure”.

Finally cluster 4, with 35% of respondents evaluate above the average the “Conviviality” factor and below the average the “Personal performance” factor.



Bivariate analysis, including cross-tabulation with Chi square statistics, was used to profile the clusters in terms of the socio-demographic characteristics and consumption frequency.

Based on this analysis segments were profiled in what concerns demographic and socio-economics characteristics on Table 8.

Table 8 – Cluster profiling: demographic and socio-economic characteristics

		Cluster 1	Cluster 2	Cluster 3	Cluster 4	Sample	Signif. level ⁽¹⁾
Gender	Female (%)	47.8	37.1	68.0	45.6	47.0	< 0.001
	Male (%)	52.2	62.9	32.0	54.4	53.0	
Age	15 – 24 (%)	7.6	12.2	32.7	10.8	13.3	< 0.001
	25 – 34 (%)	36.2	33.7	43.5	40.9	38.2	
	35 – 44 (%)	24.3	15.3	13.6	22.6	19.9	
	≥ 45 (%)	31.9	38.9	10.2	25.7	28.6	
Income	Level 1 (%)	31.4	36.4	54.3	33.7	36.6	0.001
	Level 2 (%)	23.9	21.6	22.8	27.4	24.4	
	Level 3 (%)	39.4	32.1	16.5	33.4	32.4	
	Level 4 (%)	5.3	9.7	6.4	5.4	6.7	
Region	North (%)	29.7	35.9	22.0	25.5	28.9	0.003
	Centre (%)	6.2	11.6	7.1	5.1	7.4	
	Lisbon (%)	48.7	38.4	59.6	52.8	48.8	
	Alentejo (%)	13.6	12.3	9.9	12.5	12.4	
	Other (%)	1.9	1.9	1.4	4.1	2.6	

(1) χ^2 test.

As can be seen, youngest respondents are mainly represented in segment 3, respondents aged 25-34 years are more frequently in segment 3 and also 4, respondents aged 35-44 years are mainly represented in segment 1 and elderly respondents are more frequently in segment 2.

Women are clearly more represented in segment 3, while segment 2 is largely represented by men.

Respondents with the lowest income level are clearly more represented in segment 3, those of “medium” income in segment 4, while “high” and “very high” income respondents are mostly in segments 1 and 2 respectively.

Respondents of the North and Centre are mainly in segment 2, while those from Lisbon are more frequently in segments 3 and 4.

Consumption frequency is also quite different among segments as can be learned on Table 9.

Non-consumers and infrequent wine consumers (youngest respondents) are more represented in segment 3, occasional consumers are more frequent in segment 1 (35 – 44 years) and 4 (25 – 34 years), and regular consumers in segment 2 (mainly 45 years or more).

Table 9 – Cluster profiling: consumption frequency

Consumption frequency	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Sample	Signif. level ⁽¹⁾
Never (%)	0.0	0.3	14.3	0.3	2.1	< 0.001
Rarely / occasionally (%)	42.4	24.3	81.0	39.6	41.8	
Once or twice a week (%)	34.8	33.7	3.4	37.0	31.0	
Everyday or almost everyday (%)	22.8	41.7	1.4	23.1	25.0	

(1) χ^2 test.

4. Conclusions

For the analyzed sample, age is in fact, a differentiation factor of wine consumption behaviour.

Despite younger consumers having ordered choice criteria and information sources in almost the same way as other respondents, results from independence tests and ANOVA show that these consumers seem to attribute more relevance to the front label and the brand as choice criteria, and also to advertising, as an information source.

From factor analysis, three factors summarize the information concerning motives/attitudes towards wine consumption: one factor related to “Taste/Pleasure”, one with “Conviviality” and the third with “Personal Performance”.

Using cluster analysis, based on these factors, four different segments have been identified.

Segment 3 is mainly represented by non-consumers and rare wine drinkers, many of them being women. This type of consumers doesn't seem to appreciate wine, nor recognize its conviviality role. As they are very young, they probably prefer other drinks as the results of the ESPAD report (Hibell *et al.*, 2009) suggest. In fact, according to these study results, for young Portuguese students aged 16, the most commonly reported type of alcoholic drink, used in the last 30 days before the survey took place, was beer with 54 % of the respondents, while wine had the lowest share with 33%.

On the opposite, segment 2 is associated clearly with older consumers, mainly men. They drink wine everyday or almost everyday and they do appreciate wine taste. Wine seems also important for their individual performance.

Two different segments of occasional consumers were also identified: one group that generally enjoys the taste of the wine, and another group, including respondents that associate wine consumption mainly with conviviality. Respondents aged 25 – 34 years are more represented in cluster 4, while those aged over 35 – 44 years are mainly in cluster 1. Both segments show a larger share of consumers drinking wine more frequently (once or twice a week) than those included in cluster 3.

Further analysis of the survey information will allow a more detailed cluster profiling, namely in what concerns their buying and consumption behaviour.

The main limitation of this analysis is the fact that it was based on an internet survey, thus making the sample non-random, and significant biased towards respondents with higher education levels, and also to younger respondents, as expected.

Despite not representative of the Portuguese wine drinkers, results from this sample may be interesting for the Portuguese wine marketers, better target the different consumer segments, adjusting marketing strategies to their particular characteristics.

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