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# ADVERTISEMENT IMPACT ON CONSUMERS PREFERENCES:

# A CHOICE EXPERIMENT APPROACH

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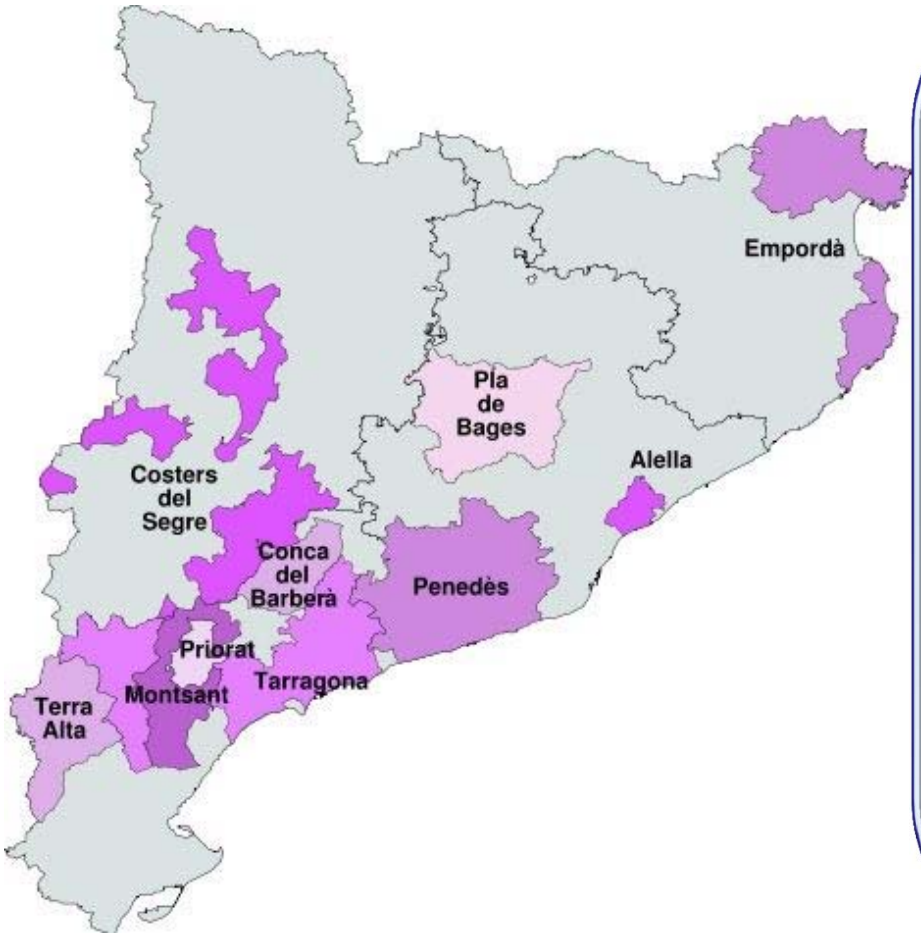
# Outline

# 1. INTRODUCTION




- **ECONOMIC Contribution**
  - **Wine making in Catalonia contributes up to the 6,6% of the Gross Value Added of the Agro food sector.**
  - **It is considered one of the most important sector for Catalonia's internationalization**
- **SOCIAL and ENVIRONMENTAL functions**

# 1. INTRODUCTION

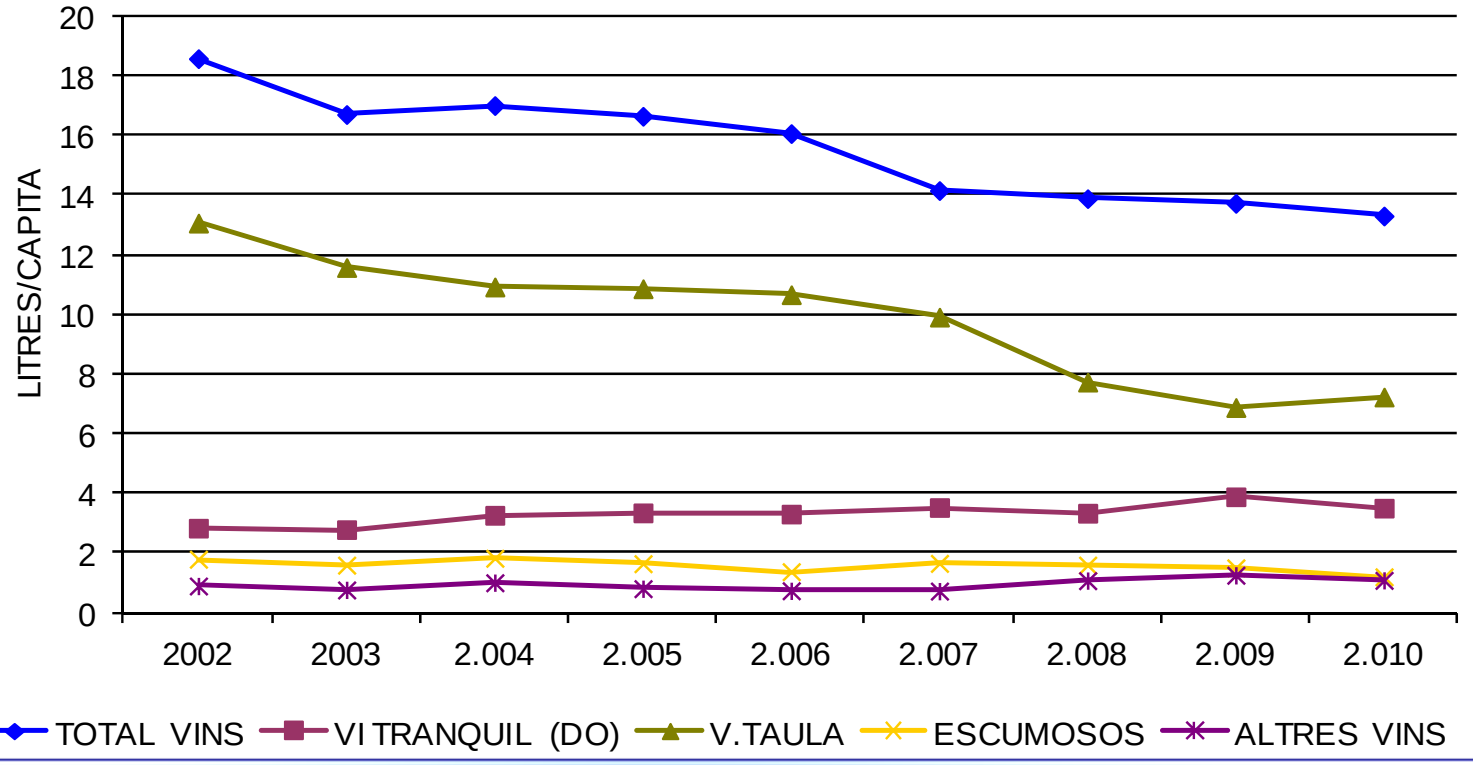



**In Catalonia there are 12 DESIGNATIONS OF ORIGIN (DO).**

**Grape SURFACE registered under a DO is HIGHER THAN 90% of the TOTAL Grape Surface in Catalonia → SPECIALIZATION in Quality Wines (QWpsr)**

# 1. INTRODUCTION

- Wine **CONSUMPTION DECREASE**




- **Consumers are EXPERIENCING A CHANGE of habits, diminishing wine consumption frequencies, but DEMANDING HIGHER QUALITY WINES**

# 1. INTRODUCTION

**The TOTAL market share of Catalan DO is small**

| | TAM DG2004 | TAM DG2005 | TAM DG2006 |
|---|---|---|---|
| Catalan Wines (11 DO) | 24,6 | 23,7 | 23,4 |
| Catalunya | 4,7 | 7,1 | 7,8 |
| Penedès | 16,3 | 12,5 | 12,1 |
| Costers del Segre | 3,3 | 4,0 | 3,4 |
| Rioja | 25,5 | 25,9 | 24,9 |
| Navarra | 4,2 | 3,7 | 5,0 |
| Valdepeñas | 6,5 | 5,2 | 5,4 |
| Mancha | 2,3 | 2,2 | 3,2 |
| Ribera del Duero | 4,2 | 3,5 | 4,0 |
| Cariñena | 8,9 | 13,6 | 13,4 |
| Somontano | 11,7 | 9,8 | 9,3 |
| Others DO (14 DO) | 12,1 | 12,4 | 11,4 |

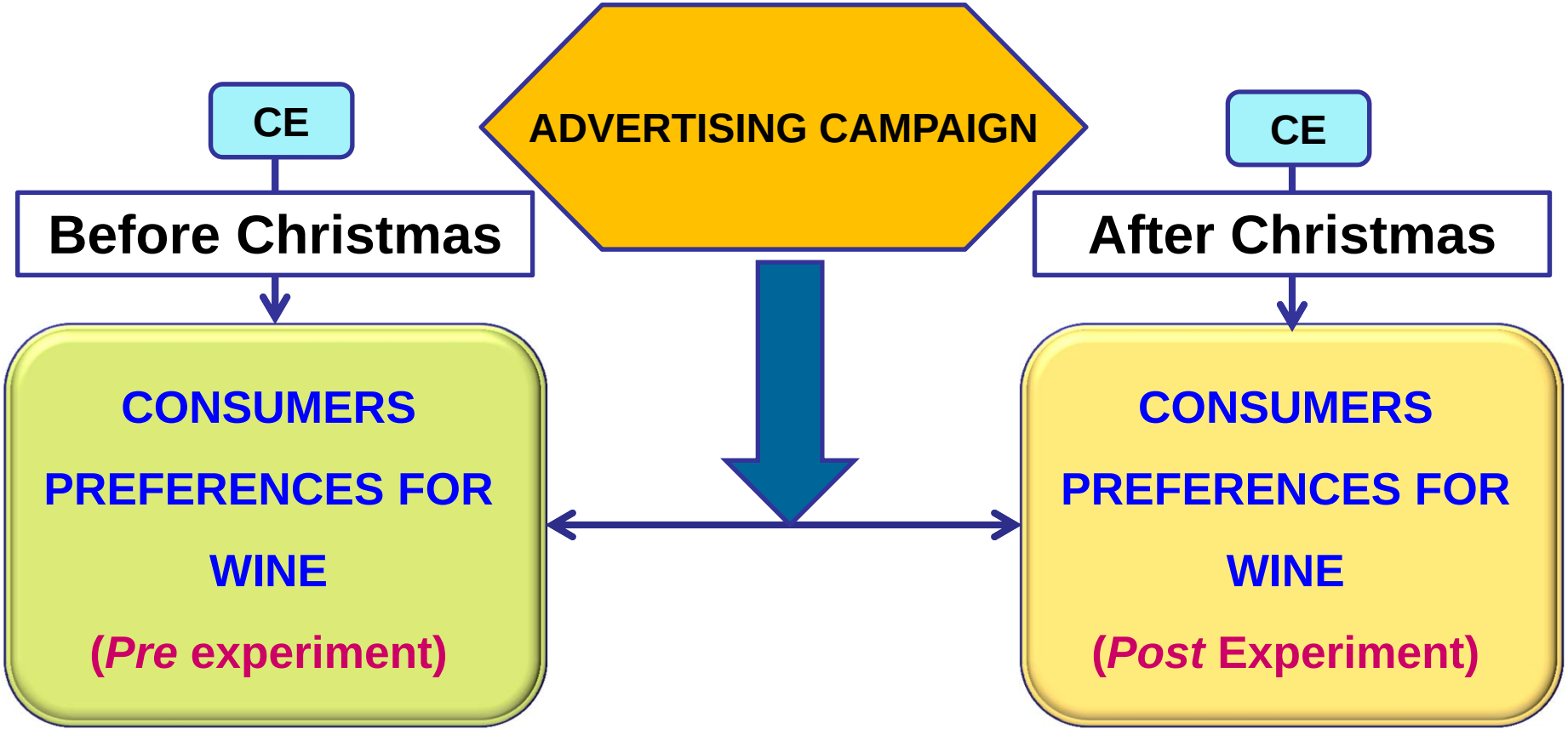
*INCAVI, 2006. El mercat del vi. Informe elaborat per AC Nielsen*

# 2. OBJECTIVES

- Under this environment, strategic plan to highlight the **ORIGIN** of the Catalan wine as a relevant factor for consumers' decisions → **ADVERTISING CAMPAIGN** for local wines (Christmas 2007). Our objectives are:

1. To assess **CONSUMER PREFERENCES** and willingness to pay of **RED WINE CONSUMED IN A SPECIAL OCCASION** in Catalonia.
2. To determine if the preferences were **MODIFIED** after the **ADVERTISEMENT CAMPAIGN.**

# 3. METHODS: Framework



# 3. METHODS: The Choice Experiments

- **The Choice Experiments (CE) is a suitable method to analyze consumers' preferences for "complex" goods in order to evaluate simultaneously their descriptors (attributes & levels).**
- **It uses experimental design to create different hypothetical scenarios of a product (alternatives) grouped in "CHOICE SETS" to be evaluated by respondent.**

# 3. METHODS: The Choice Experiments

- **Researchers usually face TWO APPROACHES:**
  1. **Excluding the "opt-out" option from choice sets by forcing participants to select an alternative.**
  2. **Including in the choice set the "opt-out" option allowing for a non-forced choice task.**
- **The issue of including or excluding the opt-out alternative in CE has been addressed by several studies. An extended literature review guided us to choose for a forced approach due to the following issues:**

- **Why EXCLUDING an opt-out option?**

1. **Our interest is to COMPARE LEVELS AND ATTRIBUTES: (ORIGEN & THE IMPACT OF ADVERTISEMENT ON IT).**
2. **The PROCRASTINATION OF THE CHOICE IS DAMAGING: The timing of the experiment is Christmas and consumers are "forced" to buy wine for celebrations i.e. the cost of delay is high or the product is needed (CHRISTMAS).**
3. **To avoid potential "GREATER EASY WAY OUT" we hypothesize, that consumers in the post experiment (after Christmas) are more likely to choose the non-choice option as the interest of celebration has passed**

# 3. METHODS:The Econometric Model

- In **FORCED CHOICE**, the IIA (**INDEPENDENCE OF IRRELEVANT ALTERNATIVES**) constraint of **MNL/CL** tend to be violated
- We look out for models that can **OVERCOME** this limitations → The **HETEROSCEDASTIC EXTREME VALUE MODEL** (**HEV**) relaxes the restrictive IIA property by allowing different scale parameters across alternatives

# 3. METHODS:The Econometric Model

- **Probability that an individual will choose alternative *i* from the set C**

$$P_i = \Pr(U_i > U_j) = \Pr(\varepsilon_j \le V_i - V_j + \varepsilon_i) = \int_{\varepsilon_i=-\infty}^{\varepsilon_i=+\infty} \prod_{j \in C,\, j \neq i} \Lambda\left[\frac{V_i - V_j + \varepsilon_i}{\theta_j}\right] \frac{1}{\theta_i} \lambda\left(\frac{\varepsilon_i}{\theta_i}\right) d\varepsilon_i$$

- **The above probability expression collapses to the MNL**

$$P_{in} = \frac{e^{\mu V_{in}}}{\sum_{i=1}^{i=I} e^{\mu V_{in}}}$$

**ARE DIFFERENT IN THE HEV**

- **The Utility function in the basic model (i.e. without heterogeneity):**

$$V_{in} = \sum_k \beta_k X_{ki}$$

# 3. METHODS:The Econometric Model

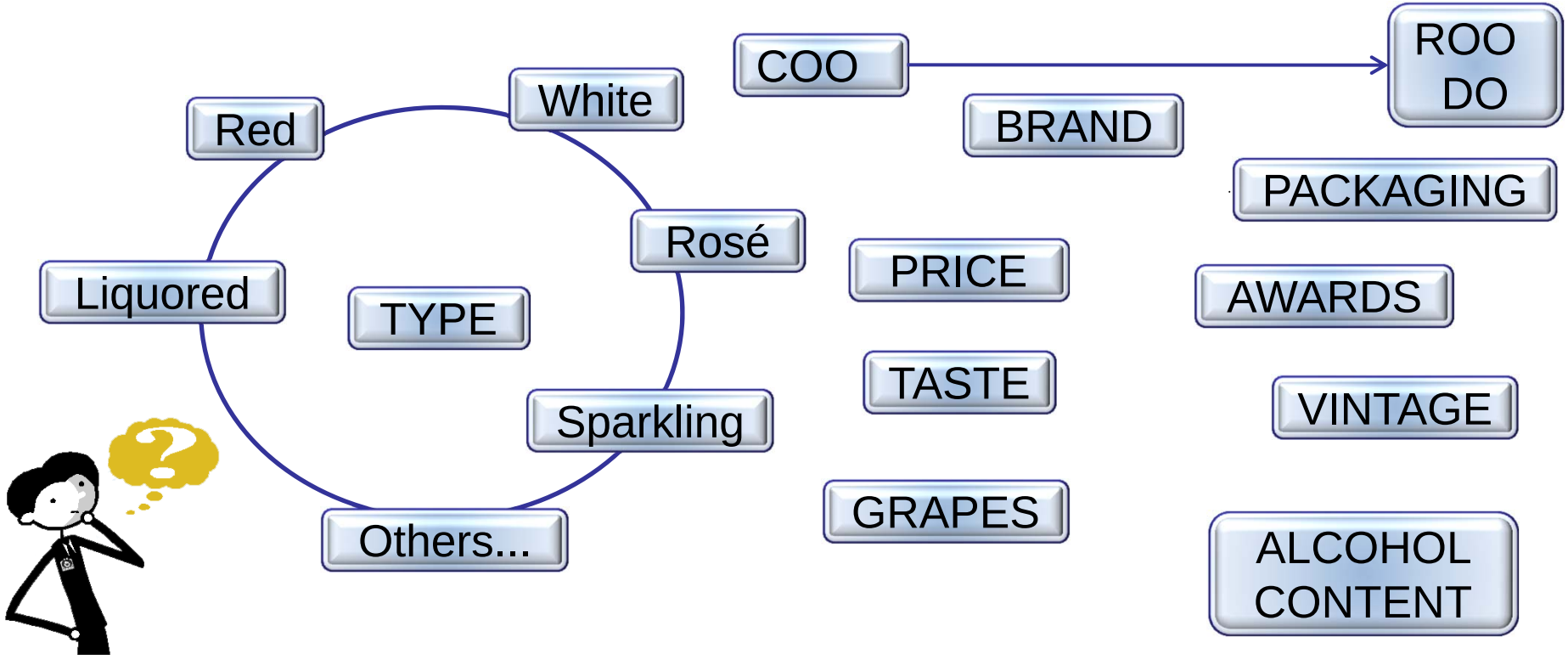
- **The Utility function to analyze consumers' heterogeneity:**

$$V_{in} = \sum_k \beta_k X_{ki} + \sum_k \sum_p \alpha_{kp} (X_{ki} \times S_{pn})$$

**The relationship between the valuations of attributes and respondents particular characteristics (social, demographic and behavioral variables) are included.**

# 4. EMPIRICAL APPLICATION: Attributes and Levels

- **Wine is a difficult and confusing product for consumers to choose (Lockshin *et al*., 2006) → immense number of cues**



# 4. EMPIRICAL APPLICATION: Attributes and Levels

**PRICE**

When consumers do not have information about the product, it generally performs as a proxy to infer the quality of the product when:

1. **The product cannot be evaluated**
2. **The risk of making a wrong choice is high**

**It will depend on the consumption occasion** → **Christmas**

# 4. EMPIRICAL APPLICATION: Attributes and Levels

**BRAND**

- For some authors is the key unit of decision

- *In our super communicated societies consumers' minds reject to store some information → the amount of information that consumers use to make a decision is small*

**Or GENERIC TYPES**

**ROO DO**

- Plays a key role in the consumers' decision making process

**GRAPE VARIETY**

# 4. EMPIRICAL APPLICATION: Attributes and Levels

**COUNTRY OF ORIGIN**

- Plays a key role in the consumers' decision making process

- In Spain, DO have been claimed as main determinant of wine prices and significant for consumers choices.
- Nevertheless, studies in Catalonia had not been yet performed

# 4. EMPIRICAL APPLICATION: Attributes and Levels

**KWOLEDGE OF THE WINE**

1. **Previous knowledge of the wine**
2. **Recommended wine and,**
3. **Prestigious wine.**

**Prior tasting experience and recommendations have been determined as consumers' main selection cues when buying wine in retail stores.**

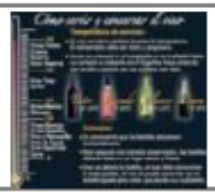
**By the third level we try to ascertain the effect of a known brand name in front of the other two alternatives.**

# 4. EMPIRICAL APPLICATION: Attributes and Levels

| Attributes | symbols | Levels |
|---|---|---|
| *Origin* | $A_1$ | Catalonia (regional), Spain (national), Imported (international) |
| *Knowledge* | $A_2$ | Own Experience, Recommendation, Prestige |
| *Variety* | $A_3$ | Cabernet Sauvignon, Grenache, Merlot |
| *Price* | $A_4$ | €6 , €10, €14 |

- A full orthogonal factorial design→ 81 hypothetical products can be generated from $3^4 x 3^4$ (6,561) possible combinations.
- Orthogonal fractional factorial design → 9 choice sets

# 4. EMPIRICAL APPLICATION: Experimental design

| ELECTION # 1 | Alternative "A" | Alternative "B" |
|---|---|---|
| Origin   | Foreign | Catalonia |
| Knowledge  | Prestigious | Personal experience |
| Variety  | Grenache | Merlot |
| Price   | €6 | €14 |
| 1. Considering that "A" and "B" are the only available products, which product would you choose? | "A" □ | "B" □ |

# 4. EMPIRICAL APPLICATION: Sampling

- **Data used in this analysis was obtained from a face-to-face questionnaire with 299 and 400 consumers that were qualified by having purchased a bottle of wine in the last 3 months.**

***Pre-experiment (before Christmas)***
299 questionnaires

***Christmas advertisement Campaign***
Broadcasting the advertisement on Television and public bus

***Post –experiment (after Christmas)***
400 questionnaires

# 4. EMPIRICAL APPLICATION: Heterogeneity analysis

## Included variables to analyze consumers' heterogeneity:

**Social and economic variables:**

- Gender
- Age
- Household social class
- Place of birth

**Variables related to attitude towards Catalan wines:**

- Catalan wines have good flavor, texture and palate
- Catalan wines possess well known brands and have public prestige and,
- Catalan wines are reasonably priced

**Behavioral variables related to wine involvement:**

- Wine purchase frequency
- Reading the information about wine published on the press

# 4. EMPIRICAL APPLICATION: Heterogeneity analysis

- **As an example, the utility function for the gender variable:**

$$V_{jn} = \beta_{ORIG_1} \cdot ORIG_{1_j} + \beta_{ORIG_2} \cdot ORIG_{2_j}$$

$$+ \beta_{KNOW_1} \cdot KNOW_{1_j} + \beta_{KNOW_2} \cdot KNOW_{2_j}$$

$$+ \beta_{VAR_1} \cdot VAR_{1_j} + \beta_{VAR_2} \cdot VAR_{2_j}$$

$$+ \beta_{\text{Price}} \cdot PRICE_j$$

$$+ \beta_{ORIG_1 \times GEN} \cdot ORIG_1 \times GEN + \beta_{ORIG_2 \times GEN} \cdot ORIG_2 \times GEN$$

$$+ \beta_{KNOW_1 \times GEN} \cdot KNOW_1 \times GEN + \beta_{KNOW_2 \times GEN} \cdot KNOW_2 \times GEN$$

$$+ \beta_{VAR_1 \times GEN} \cdot VAR_1 \times GEN + \beta_{VAR_2 \times GEN} \cdot VAR_2 \times GEN$$

$$+ \beta_{PRICE_1 \times GEN} \cdot PRICE \times GEN$$

- **Scale parameters are significantly different from 1.0 showing variance variability among alternatives. it implies that the assumption of independently and identically distributed (IIID) across alternatives is violated, confirming that the specified model in this study is appropriate**

| | | | |
|---|---|---|---|
| Grenache | -0.165 | 0.037 | 0.000 |
| Merlot | -0.112 | 0.037 | 0.002 |
| Price | -0.086 | 0.017 | 0.000 |

*Scale Parameters of Extreme Value*

| | | | |
|---|---|---|---|
| Grenache | -0.194 | 0.042 | 0.000 |
| Merlot | -0.099 | 0.041 | 0.015 |
| Price | -0.166 | 0.021 | 0.000 |

*Scale Parameters of Extreme Value*

- **Results demonstrate that, in both models, all parameters (variables coefficients) are statistically significant with the exception of the level "recommended" of the "Knowledge" attribute, indicating that all the attributes considered are significant determinants of consumer welfare.**

- **IPs are LOWER in the POST experiment → post experiment time is (January), which is conditioned by 2 issues:**
  1) **households must accommodate from the high expenditure related to Christmas.**
  2) **The winter sales start. As a consequence, consumers' overall WTP for food and beverage is low.**
- **Results have to be interpreted in RELATIVE TERMS**

| *levels* | *Implicit Price* | *Implicit Price* | *pre to post* | *difference* |
|---|---|---|---|---|
| Catalonia | 3.70 (2.80; 5.42) | 2.65 (2.18; 3.35) | -28.31%*** | 26.785 |
| Spain | 1.77 (1.06; 2.85) | 0.50 (0.12; 0.92) | -72.04%*** | 61.518 |
| Foreign | -5.48 (-7.96; -4.05) | -3.15 (-3.93; -2.54) | 42.48%*** | -51.064 |
| Experience | 0.63 (0.47; 0.92) | 0.81 (0.67; 1.03) | 30.34%*** | -7.308 |
| Recommended | 0.55 (-0.18; 1.34) | -0.17 (-0.63; 0.21) | -131.46%*** | 43.241 |
| Prestige | -1.18 (-2.10; -0.49) | -0.64 (-1.06; -0.25) | -45.62%*** | -32.228 |
| Cabernet Sauvignon | 3.23 (2.45; 4.73) | 1.77 (1.46; 2.24) | -45.10%*** | 44.866 |
| Grenache | -1.92 (-3.16; -1.16) | -1.18 (-1.68; -0.76) | -38.79%*** | -34.668 |
| Merlot | -1.31 (-2.20; -0.61) | -0.60 (-1.01; -0.22) | -54.34%*** | -38.659 |

# 5. RESULTS

## The economic interpretation: the Implicit Price-IP

| Percentage change of IP between Levels | PRE advertisement | POST advertisement | Sig. |
|---|---|---|---|
| Catalonia compared to Spain | 52,16% | 81,13% | *** |
| Catalonia compared to Foreign | 248,11% | 218,87% | *** |
| Spain compared to Foreign | 409,60% | 730,00% | *** |
| Experience compared to Recommended | 12,70% | 120,99% | *** |
| Experience compared to Prestige | 287,30% | 179,01% | *** |
| Recommended compared to Prestige | 314,55% | -267,47% | *** |
| Cabernet Sauvignon compared to Grenache | 159,44% | 166,67% | - |
| Cabernet Sauvignon compared to Merlot | 140,56% | 133,90% | - |
| Grenache compared to Merlot | 31,77% | 49,15% | - |

- **Prestigious wines increase their relative importance in the post experiment**
- **Finally, no significant changes have been detected in relation to grape varieties.**

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**Attribute: *Origin***

# 6. RESULTS

## Heterogeneity of Consumers Preferences. The Implicit Price-IP

| ORIGIN / VARIABLES | CATALAN | | | | | | | | SPANISH | | | | | | | | FOREIGN | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRE_ Advertisement | | | | POST_ Advertisement | | | | PRE_ Advertisement | | | | POST_ Advertisement | | | | PRE_ Advertisement | | | | POST_ Advertisement | | | |
| Gender | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | |
| | 0.94 (0.01; 2.78) | | 4.70 (-8.77; 27.9) | | 2.20 (1.73; 2.98) | | 3.19 (2.50; 4.43) | | 0.83 (0.07; 2.56) | | 1.30 (-3.06; 5.84) | | 0.38 (-0.13; 0.96) | | 0.63 (0.10; 1.30) | | -1.77 (-5.10; -0.75) | | -6.00 (-26.1; 17.4) | | -2.58 (-3.60; -1.86) | | -3.83 (-5.23; -2.93) | |
| Age | 20-34 | 35-44 | 45-59 | 60-70 | 20-34 | 35-44 | 45-59 | 60-70 | 20-34 | 35-44 | 45-59 | 60-70 | 20-34 | 35-44 | 45-59 | 60-70 | 20-34 | 35-44 | 45-59 | 60-70 | 20-34 | 35-44 | 45-59 | 60-70 |
| | 2.05 (1.4; 4.0) | 2.56 (1.8; 4.2) | 2.27 (-5.8; 2.3) | 5.32 (1.3; 23.) | 1.86 (1.4; 2.7) | 3.06 (2.2; 5.0) | 2.08 (1.6; 2.8) | 6.25 (3.7; 16.) | 1.07 (0.1; 2.7) | 1.41 (0.6; 2.9) | 1.59 (0.3; 3.8) | 0.74 (-0.8; 3.6) | 0.27 (-0.4;1.0) | 0.35 (-0.4; 1.3) | 0.80 (0.2; 1.4) | 0.54 (-1.1; 2.9) | -3.12 (-6.2;-1.7) | -3.97 (-6.7; -2.6) | -3.86 (-8.4; -2.2) | -6.06 (-8.5; -2.1) | -2.13 (-3.3; -1.3) | -3.40 (-5.5; -2.2) | -2.88 (-4.0; -2.1) | -6.79 (-18.; -3.7) |
| Social class | High | Average | Low | | High | Average | Low | | High | Average | Low | | High | Average | Low | | High | Average | Low | | High | Average | Low | |
| | 5.16 (2.7;16.2) | 2.88 (2.12; 4.36) | 4.71 (2.63; 15.02) | | 2.21 (1.75; 2.95) | 3.51 (2.62; 5.23) | 2.08 (1.53; 3.30) | | 1.57 (-0.15; 6.08) | 1.90 (1.01; 3.18) | 1.46 (-0.42; 5.94) | | -0.08 (-0.53; 0.44) | 1.03 (0.25; 1.92) | 0.62 (-0.22; 1.57) | | -6.73 (-21.5; -3.2) | -4.78 (-7.26; -3.35) | -6.17 (-19.7; -3.24) | | -2.14 (-2.96; -1.54) | -4.55 (-6.80; -3.22) | -2.69 (-4.36; -1.73) | |
| Place of birth | Cat. | Spain | Foreign | | Cat. | Spain | Foreign | | Cat. | Spain | Foreign | | Cat. | Spain | Foreign | | Cat. | Spain | Foreign | | Cat. | Spain | Foreign | |
| | 4.55 (2.9; 9.19) | 3.55 (2.46;6.16) | 1.81 (1.24; 3.39) | | 3.61 (2.87; 4.82) | 1.50 (1.09; 2.32) | 0.16 (0.12;0.27) | | 3.05 (1.65;6.40) | 0.87 (-0.16;2.17) | -0.15 (-1.33; 0.92) | | 0.41 (-0.03; 0.95) | 0.91 (0.02; 1.96) | 0.38 (-0.54; 1.41) | | -7.6 (-14.8;-4.8) | -4.42 (-7.5;-2.84) | -1.65 (-3.29;-0.68) | | -4.02 (-5.28;-3.17) | -2.40 (-4.07;-1.43) | -0.55 (-1.56; 0.26) | |
| Purchase frequency | Low | | High | | Low | | High | | Low | | High | | Low | | High | | Low | | High | | Low | | High | |
| | 5.15 (2.85; 17.98) | | 3.20 (2.42; 4.75) | | 2.31 (1.78; 3.26) | | 2.87 (2.27; 3.85) | | 2.41 (0.69; 8.27) | | 1.56 (0.80; 2.65) | | 0.69 (0.12; 1.41) | | 0.38 (-0.11; 0.93) | | -7.55 (-26.49; -3.98) | | -4.76 (-7.05; -3.47) | | -3.00 (-4.24; -2.20) | | -3.24 (-4.36; -2.48) | |
| Read information in the press | Yes | | No | | Yes | | No | | Yes | | No | | Yes | | No | | Yes | | No | | Yes | | No | |
| | 4.91 (3.27; 9.47) | | 2.79 (2.00; 4.56) | | 4.02 (3.02; 5.89) | | 1.59 (1.29; 2.06) | | 2.13 (0.92; 4.72) | | 1.48 (0.67; 2.87) | | 0.50 (-0.14; 1.29) | | 0.51 (0.07; 1.01) | | -7.04 (-14.15;-4.51) | | -4.27 (-7.07; -2.93) | | -4.52 (-6.63; -3.30) | | -2.10 (-2.79; -1.58) | |
| Catalan wines have good flavor, texture and palate | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | |
| | 2.78 (-5.92; 13.86) | | 2.12 (0.34; 12.02) | | 3.07 (2.54; 3.90) | | -0.6 (-1.19; -0.40) | | 1.13 (-1.66; 6.01) | | 4.23 (-16.74; 21.76) | | 0.42 (0.03; 0.86) | | 1.04 (-0.11; 2.77) | | -3.91 (-16.76; -1.15) | | -6.35 (-33.17; 26.84) | | -3.49 (-4.39; -2.82) | | -0.44 (-1.80; 0.63) | |
| Catalan wines are well-known and have public prestige | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | |
| | 4.17 (3.14; 6.28) | | 0.60 (-2.08; 4.20) | | 3.13 (2.59; 3.97) | | -0.50 (-0.99; -0.34) | | 1.85 (-7.65; 11.12) | | 1.23 (-1.05; 6.15) | | 0.35 (0.39; 3.38) | | 1.48 (-0.04; 0.78) | | -6.02 (-8.93; -4.42) | | -1.83 (-9.06; 4.69) | | -3.48 (-4.37; -2.82) | | -0.98 (-2.56; 0.01) | |
| Catalan wines are reasonably priced | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | | Agree | | Disagree | |
| | 4.13 (3.14; 6.12) | | 0.28 (-0.68; 1.70) | | 3.37 (2.73; 4.37) | | 0.47 (0.36; 0.69) | | 1.52 (0.78; 2.59) | | 3.64 (-8.14; 19.50) | | 0.42 (-0.03; 0.91) | | 0.77 (0.13; 1.55) | | -5.65 (-8.24; -4.18) | | -3.92 (-20.74; 7.12) | | -3.78 (-4.90; -2.99) | | -1.24 (1.81; 2.78) | |

Shadowed cells are statistically significant at 90 %.

# 6. RESULTS

## Heterogeneity of Consumers Preferences. The Implicit Price-IP

- MALE show more consistent results than FEMALE. Male indicate a clearer preference for the CATALAN origin and the CABERNET SAUVIGNON grape

- Consumers' preferences for Catalan origin and for the Cabernet Sauvignon variety INCREASE WITH AGE
- The YOUNGEST segment shows the highest IP for a previously EXPERIENCED wine.

# 6. RESULTS

## Heterogeneity of Consumers Preferences. The Implicit Price-IP

- **Those that READ information show a higher IP for the origin attribute (CATALAN), non-significant results for Merlot and, prestigious wines are not relevant for them (nor negative nor positively influencing).**
- **Their results manifest a stronger influence by wine articles and advertisement as a consequence of their reading.**

- **Those who agree with the proposed statements about Catalan wines reveal higher IP's for them.**

# 7. CONCLUSIONS

- **The proposed spot does NOT affect the RANKING of the preferred attributes.**
- **The most preferred product is a CATALAN wine made from the CABERNET SAUVIGNON variety and PREVIOUSLY TASTED by the consumer.**
- **After the advertising, the RELATIVE IMPORTANCE of the "Catalan" level has INCREASED compared to the Spanish one. This is especially relevant due to the competitive positioning of Spanish wines in Catalonia, particularly those from La Rioja.**

# 7. CONCLUSIONS

- Consumer preference towards French grape varieties can not be generalized, since it is specific for Cabernet sauvignon
- Consumers prefer a previously tasted wine over a prestigious or recommended one → Importance of wine fairs and public tastings as a marketing strategy to let local wines be known by the consumer

# 7. CONCLUSIONS

- Instead **OF BIG PROMOTION CAMPAIGNS** focused in special consumption occasions, smaller pieces of information along the year could be more effective in increasing consumer knowledge towards Catalan wines

# THANK YOU FOR YOUR ATTENTION!!!

**For further information, do not hesitate to contact us:**

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Wine in Moderation

*Art de Vivre*