

INFORMATIONAL VALUE OF PEERS' AND EXPERTS' RATINGS ON PERCEIVED QUALITY: STATED AND REVEALED PREFERENCE OF WINE CONSUMERS IN A NON-HYPOTHETICAL HOME USE TEST SETTING

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Abstract

Purpose

Most of the world's wine consumers consider wine buying a risky activity due to a high level of confusion stemming from the complexity of the market. A solution to cope with this confusion is for consumers to rely on better-informed agents when making their decision. These third parties may be either peers or experts offering homogenous information mapped on a single rating scale comparable among wines. The positive or negative word of mouth (PWOM/NWOM) expressed in the form of numerical ratings may influence the consumers. The influence of word of mouth (WOM) on product judgment is considered greater when it comes from an expert. Thanks to the internet, the search costs for price, information, and expertise have fallen. Recent publications show that social media are gaining importance in the process of wine selection, especially among millennials. With the internet and the emergence of online rating, wine consumers have shifted from a passive to an active purchase evaluation, and their comments displayed online provide an informative signal of quality. The growing influence of word of mouth and consumer-generated content in consumer purchase decision-making could lead to the exclusion of the traditional reliance on the opinions of experts or professional critics. Similarly, easier access to past price data in a market where quality evaluation is difficult raises the question of the future of evaluators.

This paper aims to examine the extent to which the perception, expressed evaluation, and willingness to pay for wine of wine consumers are influenced by their exposition to wine quality information in a home use-test setting.

Design/methodology/approach

This research design is at the crossroads of psychology, sensory sciences, and experimental economics. It unveils the effect of the provision of information relative to quality on consumers' hedonic and emotional responses and willingness to pay for wines. Protocol approved by a review board: Protocol number CERBSB2022-9. Database declared to the relevant authority (Commission Nationale Informatique et Libertés—CNIL). Data collection, processing, storage and confidentiality management have been previously validated with the DPO. Data is fully anonymized (stripping of the data, coding, attribution of a unique number to each participant, unique link to access the experiment). Anonymization is guaranteed to the participants in the informed consent part of the study.

For the first study, as an alternative to laboratory tests, we designed a remote sensory evaluation using a home-use-test (HUT) setting thanks to the development of a novel sampling technique for wine, and a Becker–DeGroot–Marschak (BDM) experimental online auction. We expose a representative panel of untrained regular consumers of red wine recruited using quotas in Qualtrics. We selected red wine, to avoid complexifying the HUT with service temperature, as red wine can usually be consumed at room temperature. The population that received the samples (n=300) is comparable in France (n=150) and Spain (n=150). We expose the participants to both positive and negative word-of-mouth (either peers' or experts' ratings) in a home-use test setting. Calculation of the sample size from the estimated effect. Addition of an error margin. Sample size in the range 100-150 persons for most tolerable levels of risk.

$$N = \frac{(Z_{\alpha} + Z_{\beta})^2 S^2}{(\mu_1 - \mu_2)^2}$$

Where N is the number of consumers needed in the test, Z_{α} and Z_{β} are the Z-scores associated with our chosen levels of alpha- and beta-risk, S is the anticipated standard deviation of the scores (or a pooled estimate), and $\mu_1 - \mu_2$ is the difference between means or the size of the difference we want to be sure to detect.

*Based on several papers the effects would be around a partial eta-square of .10 (so a Cohen's d of 0.66) - Estimation based on G*Power calculations. Now some of the studies are old, have small sample sizes and obviously, the non-significant ones are not published (publication bias). We would therefore tend to correct this a little and estimate an effect between .06 and .08 (for eta-partial square) and 0.50 and 0.59 for d. With 4 groups, we would need 125 pp in total to have an 80% chance of finding an effect; for the second 95 pp. With 100 pp we have an 80% chance of finding an effect of d = .056.*

The second study has been run in a laboratory with WSET certified students, to analyze the influence of the level of expertise on the results. Special attention has been carried to free-comment analysis, we also assessed the valence of the descriptive terms.

For the first study, the participants receive at home four 2cl samples (the equivalent of one swallow) of four red wines selected on the Vivino dataset. All four wines display the same (legal) information presentation (Name of the wine, name of the producer, alcohol %, Region, Appellation, Vintage 2018) from two famous wine regions: Bordeaux (France) and Rioja (Spain). We thus control for the possible influence of the labels on consumers. Though this information is not communicated to the participants, all four wines are in a similar price range (around €15) and profile (grape varieties for each country). The samples have been selected from Vivino dataset (access protected under a NDA). Those wines have been selected because they received a rating from The Wine

Advocate and a minimum 10 peer ratings in Vivino (ensuring consistency). To avoid bias: all four wines are from the same vintage: 2018, from comparable price range 12,90€ to 16€, from famous winemaking regions (Rioja & Bordeaux) and from the same region for high and low rating. The sets of two wines, from similar regions, allow testing for both positive word of mouth (PWOM) and negative word of mouth (NWOM) impact because they received either high or low ratings from peers and experts. We use ratings from Robert Parker (The Wine Advocate) for experts and from Vivino for peers. The ranking of the wines differs from peers to experts, allowing to tackle the endogeneity problem.

We use a between-subjects experimental design to test the hypotheses. To ensure the correspondence in both countries we proceed to a back-translation of the questionnaire. To avoid wine order bias, the wine order presentation is randomized using a Latin square – Williams design. The participants are randomly assigned to one of three groups to ensure that the baseline participant characteristics are comparable across the groups. The first group is the control group (they have access to no quality information), the second is exposed to both positive and negative expert ratings, and the third one to both positive and negative peer ratings.

The participants connect to the Timesens platform and taste the wines while being video recorded online. They also answer a set of questions and participate in a BDM auction for each wine. To unveil the stated and revealed preferences of the participants, we combine the use of emotion monitoring with Facereader, stated liking, and the use of free comment (FC-AEF – Attack Evolution Finish) for a word-based sensory description of the four red wines. Thus, variables like product category involvement, opinion-seeking behavior, and subjective knowledge are tested on previously validated scales. Thanks to the questionnaire we also reconstruct the purchasing and consumption patterns of the respondents. To determine the impact of the information provided on their willingness to pay, we conduct online a non-hypothetical design, the Becker, De Groot, Marschak (BDM) experimental auction method for each wine. Only one of the four wines is randomly selected for the real auction, ensuring the incentive compatibility of the study. Participants are then re-contacted after one week to confirm the hedonic valence of the terms used in the FC section. The study will be replicated in lab conditions in march 2022 to test for the influence of the environment on the results obtained.

Findings

Some results are yet to be developed to determine the informational value of peers' and experts' ratings to wine consumers. We will test whether peer's and experts' ratings have differential influence on wine consumers liking and willingness to pay for wines. If there are differences between expert's and peer's ratings impact on willingness to pay for a wine. If opinion seeking attitude, product category involvement and subjective knowledge affect the propensity to be influenced by external quality evaluation. Whether wine preferences, stated liking and revealed preferences are affected by the disclosure of a quality rating. Results are expected to be consistent across consumers in different countries (Spain, France). The first analysis already revealed differences between countries, as Spanish consumers tend to be positively influenced by COO effect, whereas French consumers tend to be negatively impacted by the same.

Practical implications

Our interdisciplinary study involving experimental economics, sensory sciences, and psychology contributes by presenting the first protocol for conducting a combined HUT, online auction as well as implicit and explicit measures of the sensory and hedonic analysis. It is also the first exploratory study developing a covid-proof experimental design for wine monitoring both stated and revealed

preferences as well as willingness to pay. We developed a 100% Home Use Test protocol, with no contact at the lab neither for sampling nor for reward.

For the industry, it is valuable to better understand what source of quality information has more value for the consumers. It will help determine how the interactions of extrinsic and intrinsic sensory perceptions affect consumer wine choices. We provide product-focused consumer research that delivers insights beyond liking and provides a deeper level of understanding of consumers' choices.

Keywords

Incentive compatible experiment, willingness to pay, stated and revealed preferences, positive and negative word of mouth, perceived quality