

Do implicit and explicit attitudes explain organic wine purchase intention? An attitudinal segmentation approach

Abstract

Purpose. The objectives are to recognize the role of implicit and explicit attitudes on organic wine purchase intention and to segment consumers using these variables.

Design. We conducted a two-part web survey (n=690) in Spain: an Implicit Association Test followed by a questionnaire on explicit attitudes, purchase intention and demographic data. Validity and reliability of these attitudes are contrasted using confirmatory factor analysis, attitude relationships with purchase intention using multiple linear regression analysis, and segments using k-means cluster and discriminant analyses.

Findings. We improve the measurement of explicit attitudes explaining organic wine purchase intention. Only attitudes towards intrinsic attributes and arousal feelings significantly explain purchase intention. Two attitudinal segments are detected; one showing moderate purchase intention with high explicit attitudinal levels and high consumption of organic wine and the other showing low levels of purchase intention and explicit attitudes, consuming mainly conventional wines. Neither segment shows any relevant differences in implicit attitudes.

Practical implications. Our analysis offers information on attitudes that contribute to explain Spanish consumer purchase intention in a wine sector notable for focusing more on making quality products than by knowing its market.

Originality/value. We offer deeper understanding of the influence of attitudes on organic wine purchase intention. This paper also presents an attitudinal segmentation of consumers.

Keywords:

Implicit attitudes, explicit attitudes, IAT, segmentation, organic wine, purchase intention.

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Introduction

For quarter of a century, an ecologic mainstream trend has managed to institutionalise sustainable food objectives and organic agriculture movements in many countries (Adams, 2016). The need to monitor the quality of this type of production has meant that this industry is strictly regulated and monitored (e.g. Sachs, 2016) and yet the number of hectares and companies dedicated to organic farming has continued to grow. The same can be said of the production and global demand for organic wine (hereinafter, OW) (Willer and Lernoud, 2016).

Two situations need consideration. Firstly, the literature highlights the fact that consumers are purchasing more OW, but have difficulties choosing and buying it (e.g. Corduas et al., 2013), due to lack of information (Szolnoki, 2013), because they are unsure what constitutes OW (e.g. Rogers, 2011) or because they do not know about the different types of OW (e.g. Delmas and Grant, 2014). Furthermore, the wine industry has mainly focused on technological innovation, quality and distribution, and has failed to target consumers. It is hardly a secret that many producers consider they do not need to focus on marketing (e.g. Haros, 2016).

Currently, market saturation and the inefficiency of classical promotional instruments have led to the emergence of a consumer-oriented approach. Private (e.g. Organic Trade Association, 2016) and academic studies have been conducted with in-depth descriptions of the role of demographic and psycho-graphic variables (e.g. values, perceptions) on OW purchase behaviour. The point is that the offer can be differentiated not only by aspects of production and technology but also through understanding consumer perceptions, expectations and preferences in terms of brand recognition, quality and product type, among others (Lockshin and Corsi, 2012).

Attitude is a fundamental aspect of consumers and may represent either an obstacle (if it is negative) or an advantage (if it is positive) for marketers. From the consumer perspective, attitudes are precursors of purchase intention and behaviour (e.g. Kim and Hunter, 1993), and so there is a need to know what attitudes may have more influence on purchase intention as a proxy for actual behaviour. In recent years there has been a major academic effort to analyse the influence of attitudes in the area of organic food (e.g. Rahnama, 2016; Rana and Paul, 2017) and to analyse the characteristics and preferences of wine consumers (Menghini, 2015). To the best of our knowledge, however, there has been little focus on OW (e.g. Barber et al., 2009; Barber, 2012). In addition, all these studies focus on declared attitudes and have not considered the possible impact of implicit (unconscious) attitudes (Greenwald and Banaji, 1995), or their potential interest for segmenting the market.

This work therefore aims to analyse the influence of implicit and explicit attitudes on OW purchase intention. The study also examines whether these variables can segment consumers to obtain attitudinal typologies. The work is structured in four parts. First, we discuss the relationship between attitudes and purchase intention, differentiating between implicit and explicit attitudes.

Second, we describe the methodology, the sample and the measurements. Third, we present the quantitative analyses. Finally, we discuss the findings and propose future lines of research.

Literature review

Purchase intention and consumer attitudes

Purchase intention is widely used by marketers when making marketing decisions (Morwitz, 2012) because it can be a good predictor of individuals' behaviour (e. g. Morrison, 1979; Chandon et al., 2005), of sales (Morwitz et al., 2007) and of the potential demand for new products (Silk and Urban, 1978). From a general point of view it can be understood as a consumer's proneness to purchase a product and subjective tendency to choose a specific brand or product category (Muller and Marvin, 1985). Classic models of consumer behaviour indicate that purchase intention appears after alternatives have been evaluated, generating a set of deliberate predispositions. Thus, in deliberate purchases, purchase intention is the result of a "conscious plan to make an effort to purchase" (Spears and Singh, 2004, p.56), and attitudes are one of its main drivers (Fishbein and Ajzen, 1975).

However, purchase intention may also arise in spontaneous or unplanned purchases (Baumgartner, 2002). This spontaneous purchases are non-routine, casual and impulsive whereas deliberate ones are thoughtful, routine or with a specific motivation (e.g. hedonic, symbolic). In spontaneous purchases, purchase intention is generated without a prior plan or when the consumer's self-control depletes, and is seen as the likelihood of purchase associated with an emotional drive (Muruganatham and Bhakat, 2013). Nonetheless, Krishna and Strack (2017) have recently noted that this exclusionary dichotomy is simplistic because the underlying mental processes interact with each other.

Attitudes are fundamental for understanding consumer decision-making processes. They refer to a set of beliefs, cognitions, experiences and emotions that reflect the evaluation of a stimulus (product, idea, person or event) and correspond to a complex psychological construct, part of the associational networks generated by the human mind (e.g. Fazio, 1986). They are important because they have a strong impact on behaviour; they feed off it and, in addition, act as mediators in the relationship between other variables (e.g. brand comprehension, environmental concern) and purchase intention.

Although there are various attitudinal types, here we consider implicit and explicit attitudes in relation to the type of mental associations they capture (Samson and Voyer, 2012), which are not exclusionary. Several studies have found that both types of attitudes can help to predict and influence different types of behaviour (e. g. Gattol et al., 2011; Zanna, 2004).

Differences between implicit and explicit attitudes

Classical theories on behaviour include attitudes as fundamental drivers. The most commonly used theories in the area of marketing and business are the Social Cognitive Theory (Bandura, 1977) and the Theory of Planned Behaviour (Ajzen, 1985; Ajzen and Madden, 1986). According to Social Cognitive Theory behaviour interacts with attitudes and the environment whereas in the Theory of Planned Behaviour, attitudes combine with subjective norms and perceived behavioural

control, which are considered to be direct predictors of purchase intention. These and other classical theories are based on a rationalist approach but also include emotions, beliefs and motivations. According to these theories, attitudes stem from cognitive processing and are obtained by conscious self-declaration.

In the mid-1990s, from a socio-psychological approach, Greenwald and Banaji (1995) introduced the concept of “implicit attitude” to deal with two weaknesses in the aforementioned classical theories on attitudes: (1) it does not seem correct to consider that people have to be aware of their attitudes for them to affect their behaviour and (2) cognitive models usually have a low predictive capability of attitudinal change due to a conflict between explicit attitudes and unconscious or implicit attitudes. This conflict appears, for example, in situations of change (examples: giving up smoking, using organic products rather than the usual conventional ones or changing habits for sustainability). The point is that there can be a gap between the declared predisposition to act and the predisposition actually felt.

From this socio-psychological approach, implicit attitudes are associations that activate automatically, and are not under consumers’ direct control as they are not understood to be a clear direct expression of their inclination to act or evaluate (Greenwald and Banaji, 1995). In contrast, explicit attitudes imply a rationalised association controlled by a conscious appraisal process. They are formed deliberately and are more easily self-reported than implicit attitudes. Perugini (2005) points out that “models of decision making within the deliberative approach have shown robust predictive power for a range of behaviours” (p.31), and so explicit attitudes play a significant, but not absolute role, in decision-making and consequently, in intention to act.

Some authors have pointed out that distinguishing between the two processes does not necessarily imply the existence of different attitudinal constructs (e.g. Fazio and Olson, 2003) because both attitudes refer to consumers’ associational evaluations of an attitude object (Bohner and Dickel, 2011). An example of this is that consumers could reject wine drinking because wine is alcoholic (negative attitude) but at the same time, prefer organic wine to conventional wine (positive attitude) because it affords greater protection of the environment. As Panzone *et al.* (2016) point out, these types of evaluations are important in products related to environmental sustainability. However, there are differences between implicit and explicit associations because affective priming (Fazio, 2001) has more impact on implicit ones. Moreover, neurological processes underlying explicit and implicit attitudes seem to be different. Thus, explicit attitudes are more closely associated to the activation of the prefrontal cortex area of the brain (involved in generating cognitive associations and decision-making) whereas implicit attitudes are more closely associated to the activity of the amygdala (involved in processing and storing memories related to emotional events) (Stanley *et al.*, 2008). The processes, however, are not exclusionary here either: whereas the amygdala recognises emotions, threats and rewards, the prefrontal cortex analyses the information received the amygdala and regulates it cognitively (Salzman and Fusi, 2010).

The stimuli consumers receive (visual, textual, and auditory) can be processed explicitly and implicitly. Explicit written or visual information (e.g. labels, type of wine, information on the Internet, shelf display information) is consciously processed, evaluating and generating thoughtful willingness to act. Whereas information which operates implicitly (e.g. Country of origin, ‘who

recommends what type of wine’) involves tacit processing and unintentional association with experiences and emotions introduced in individuals’ attitudinal responses without them noticing.

In short, consumers tend to process explicitly, but part of the information received also generates implicit attitudes (Schmidt et al., 2016) through unconscious associations. The acknowledged universal influence of explicit attitudes is joined by the confirmation that implicit attitudes can also be effective for predicting purchase intention (e.g. Vantomme et al., 2005) and behaviour itself (Perugini, 2005).

Method

Data collection and sample

Our target population are residents in Spain between the ages of 18 and 70 with Spanish as their mother tongue. Our team of interviewers had to solicit answers to a web questionnaire from people who fulfilled specific characteristics. To avoid self-selection bias due to the category of product analysed, the interviewers only mentioned that they were looking for people to collaborate in a university study with an average estimated duration of nine minutes.

The interviewers contacted potential interviewees personally or through social networks and used a check list to determine which individuals could not participate for operational or ethical reasons. People with (a) motor problems in an upper limb, (b) a strong tendency to consume alcoholic drinks or abstemious individuals and (c) the sick and convalescents were not allowed to participate. This information was not collected in any database and only served to recognise who could be asked to collaborate at the time of contact. To minimise intrusion, the interviewers were trained in contact strategies. People contacted and accepted were given a card (or sent an email) with an interviewer identification code and the link to the questionnaire website. Each interviewer followed quotas of gender, age (18–30; 31–50 and 51–70) and habitat (each individual had to reside in a different town). As the keyboard had to be used to respond to the questionnaire on implicit attitudes, the interviewers indicated that the interview could only be answered from a desktop computer.

The fieldwork took place in May 2016, and 844 responses were recorded. We then

1. Eliminated 32 cases from repeat IPs (Internet Protocol). The IP is unique for each computer and session with Internet access. Although this strategy may prevent the participation of other potential well-intentioned interviewees not contacted beforehand, eliminating repeat IPs excludes the possibility of retaining various responses from the same person/household in the same session.
2. 20 cases with fixed responses were discarded. Cases whose responses for all items were ‘1’, ‘4’ and ‘7’ (for scales in the range 1–7) and ‘1’ ‘5’ and ‘10’ (for scales in the range 1–10) were eliminated
3. 51 responses provided in less than 300 milliseconds were removed.
4. 16 cases with missing information were removed.

After the debugging process (35 outliers) the final sample (n=690) is balanced in terms of gender and age (mean=37 years), occasionally purchases organic products, with much higher

consumption of conventional wines (87.5%) and sporadic consumption of organic wines. Table 1 shows the sample profile.

ADD TABLE 1

Measurement of implicit attitudes

This study uses the Implicit Association Test (IAT) initially proposed by Greenwald *et al.* (1998) because it is the most reliable procedure for measuring implicit attitudes, with reliabilities higher than those accepted by the literature (Perugini, 2005). The software used to apply the IAT was developed by Mason *et al.* (2013) since it allows us to obtain answers online. This software directly measures response speed in milliseconds so that the shorter the response time, the greater the implicit association.

IAT is a methodology developed in the area of social psychology which enables measurement of the intensity with which various concepts are automatically associated with each other. This technique is applied by asking participants to classify different stimuli into different response categories so that they evoke the concepts that represent the categories. In this study, the stimuli are:

- a) Words that describe the organic and non-organic concepts. Organic is described by the items: natural, healthy, responsible, beneficial, favourable, and positive. Non-organic is described by the items: pollutant, harmful, irresponsible, noxious, unhealthy, and unsustainable.
- b) Images of wine bottle labels were used to distinguish between OW and conventional wines because the label is the main information consumers have for identifying wine while shopping. Labels of real and fictitious, prestigious and little-known brands were used (see Appendix 1, Table A).

How does IAT work? The procedure comprises seven blocks or tasks carried out successively, each of them containing a series of 20 to 40 rounds. In each block, participants must classify the stimuli (that flash in the centre of the screen) in the response categories shown on the right and left-hand side of the screen. To classify the stimuli, participants only have to press two keys: 'e' for categories on the left of the screen and 'i' for ones on the right.

In the first block the items are classified into the categories (organic vs. non-organic). In the second block the images of wine labels are classified into the categories 'organic wine' vs. 'conventional wine'. Then and in successive blocks, specific combinations of stimuli are produced (words and images) which must be associated to the categories. Table B in Appendix 1 shows the steps followed in this test in detail.

To measure implicit attitudes we used the *d*-score which ranges from -2 to $+2$, is non-dimensional and comparable to Cohen's (1988) *d* effect size statistic. The *d* effect size statistic measures the differences between the averages response-latencies in the analysed conditions (organic vs conventional wines) divided by the standard deviation of latencies across the cited conditions. Here, response-latency is defined as the time elapsed between the perception of a stimulus and the start of the response. For the IAT, higher and positive *d*-scores represent stronger implicit

attitudes, where OWs are associated with organic labels and conventional wines with non-organic labels. In contrast, more negative values reflect stronger implicit attitudes where the associations are OWs with non-organic labels and conventional wines with organic labels.

Measurement of explicit variables

Explicit attitudes. Two measurements were used:

1. Attitude towards wine and alcohol scale (Marinelli *et al.*, 2014). The scale has 17 bipolar adjectives where each adjective pair was rated on a 7-point scale. Its authors apply the scale to young Italians and conduct an exploratory Factor Analysis, but do not report on scale reliability or validity.
2. Attitude towards the OW scale (Rojas-Méndez *et al.*, 2015). With 9 items rated on a 7-point Likert-type scale. The original scale was applied to Canadian adults obtaining an alpha of 0.82 with only four items, but there is no information on whether the scale meets validity requirements or on its dimensionality. This study applies the scale in the form of a 10-point Likert-type scale as Spanish consumers are more used to the decimal metric system.

Purchase intention. Measured using the single item “Considering 0= not at all likely to 10= will certainly, how likely is it that you will purchase organic wine?” This item comes from Kozup *et al.* (2003). The original range 0–100 was changed to 0–10 following Juster's proposal (1966).

Procedure

A three-part web questionnaire was designed. The first part was the informed consent. It indicated that the survey was for a university study; it was voluntary and did not ask for personal information (except for gender, age and town of residence). On the web page each individual had to enter the interviewer's code and the post code for her/his place of residence. It was noted that by entering these data they were agreeing to participate in the study. The second part dealt with IAT and the third part included questions on OW purchase intention, the aforementioned attitudinal scales and demographic data. Implicit and explicit attitudes have been successfully measured online in other studies (e.g. Maier *et al.*, 2015).

To minimise a possible priming effect the IAT was presented first followed by the questionnaire to measure explicit attitudes. The understanding and ease of responding to the questionnaire were pre-tested by three individuals between 18–30 years old and another three individuals over the age of 50. The original items were translated from English to Spanish using the back translation system (Guthery and Lowe, 1992).

Findings

In this section, four types of analysis are presented. First, the descriptive statistics corresponding to the variables 'OW purchase intention' and 'implicit attitudes' are presented. Second, the structures, reliabilities and validity of the explicit attitudes from multi-item scales are verified. Third, an ordinal logistic regression is applied because the dependent variable 'OW purchase intention' has an ordinal nature. The objective is not to predict OW purchase intention but to detect which types of attitudes contribute significantly to explain the aforementioned intention. Finally,

using the relevant variables from the previous step, a cluster analysis is applied by the K-means method to create attitudinal segments following the criteria of parsimony and discrimination. The Appendix 2 shows the descriptive statistics for all the items finally used which come from the measures described above.

Descriptive results

OW purchase intention. It is a variable with ordinal nature that presents a median $Me=6.00$ and interquartile range $IQR=4.00$ showing an slight negative asymmetrical distribution (Ordinal skewness $=-0.33$). Both P-P and Q-Q plots show an almost linear behaviour. Due to this linearity, the average behaviour of the general sample (0.55 in the 0-1 range) can be estimated, and is almost equal to Huber's M-estimator of location (robust estimator to outliers) which is 0.57.

Implicit attitudes. It is a quantitative variable with mean $M=0.67$, standard deviation $SD=0.57$ with slight asymmetric distribution to positive scores (skew $=-0.82$) and kurtosis very close to the unit (1.09). As the observed d-scores are in fact effect sizes, they can be interpreted following Cohen (1988) and Sawilowsy (2009), creating nine levels of effect sizes¹. Most of the sample shows effect size (d) with positive associations (19.6% with moderate d, 29.3% with large d, and 17.0% with huge d). This result shows a moderate to significant association of OW with the concept organic and of conventional wine with the non-organic concept. Nevertheless, this association cannot be understood as high.

Model measurement of explicit attitudes

To test and assess explicit attitude measures a two-step process is performed. First, principal component analyses are used to retain the relevant items and to explore the dimensionality of the measures. Second, a confirmatory factor analysis (CFA) to verify the resulting dimensional structure from the exploratory principal component analysis is applied. Thus:

Step 1.

- (a) Rojas-Méndez's et al. (2015) scale shows a moderate fit because the Kaiser-Meyer-Olkin coefficient (KMO)=0.78, Barlett's Sphericity Test = 1685.12 (df=36, p=0.00) and measures of sampling adequacy (MSA) are adequate (Min(MSA)=0.73). Two factors explain 53.18% of the variance, but factor loadings are low (0.57 to 0.83). Cronbach's alpha reliabilities are also low (0.78 and 0.64).
- (b) The Marianelli's et al. (2014) scale shows a better fit. Thus, KMO=0.91, Barlett's Test of Sphericity = 3610.12 (df=136, p=0.00) and min(MSA)=0.62), with three factors that explain 50.01% of the total variance. Three items (DS20, DS24 and DS32) that did not load on any factor were eliminated. The 3-factor solution improves (57.34% of explained variance), but factor loadings are still low (0.52 to 0.78). Cronbach's alpha reliabilities are 0.87, 0.46 and 0.46.

Step 2.

¹ Levels used are: $d < -1.20$ (Hugely negative association), -0.80 to -1.19 (largely negative), -0.50 to -0.79 (moderately negative), -0.20 to -0.49 (slightly negative), -0.19 to $+0.19$ (no association), $+0.20$ to $+0.49$, (slightly positive), 0.50 to 0.79 (moderately positive), $+0.80$ to $+1.19$ (largely positive), and $d > 1.20$ (Hugely positive).

Only items with factor loadings higher than 0.70 (the number of factors reduces to three) in the previous principal component analyses were retained and introduced in CFA. EQS 6.1 software (Bentler, 1994–2011; Bentler and Wu, 2005) was used. The variables are considered to be reflective. The Wald Test suggests eliminating item DS23. The new model has three factors with three items each (see Table 2) and shows a good fit (Satorra–Bentler scaled $\chi^2=61.63$; $df=24$; $p=0.00$; Normed $\chi^2=2.57$; Bentler–Bonett Normed Fit Index–BBNFI=0.97; Comparative Fit Index–CFI=0.98) with low error (Root Mean–Square Error Of Approximation–RMSEA=0.05). Goodness of fit and error values are within the thresholds recommended in the literature (Hair *et al.*, 2009). Robust estimators were applied because multivariate normality was not fulfilled (Mardia test=29.00).

Reliabilities are above the thresholds suggested in the literature and factors have convergent and discriminant validities. Convergent validity was verified using confirmatory factor loadings (all significant, >0.70 or with a mean in each factor over 0.70) and AVE coefficients above 0.50 (Fornell and Larcker, 1981). Discriminant validity was verified with the confidence interval for correlations method. None of the three intervals contains the correlation value equal to one (Hair *et al.*, 2009), thereby confirming discriminant validity.

The first factor (Factor 1) covers items related to the perception of OW as healthier (item LIK03), of higher quality (item LIK04) and tastier (item LIK06). This factor refers to the intrinsic physical characteristics of the wine and is denominated “Attitude towards intrinsic attributes”. The second factor (Factor 2) covers emotional aspects that generate attraction as appeal (item DS18), pleasant (item DS19) and comfortable (item DS25), and is denominated ‘Attitude towards engaging feelings’. Finally, the third factor (Factor 3) covers activation items, both personal (happy–item DS26–, euphoric–item DS29–) and social (socialising–item DS31–) and is denominated ‘Attitude towards arousal feelings’.

ADD TABLE 2

Regression results

The relationship between attitudes and OW purchase intention was examined using ordinal logistic regression, with the three factors for explicit attitudes and the variable for implicit attitudes as independent variables.

A common problem in this type of regression is the probable failure of the proportional odds assumption when "the sample size is large or there are continuous variables in the model" (O'Connell, 2006, p.29). In this case, there are different strategies. Thus, for example, Williams (2006) proposes the use of a partial-proportional odds model, and Ari and Yildiz (2014) propose a non-proportional odds model. However, the most common strategy is to reduce the number of dependent variable response categories, usually by applying binary logistic regression and checking whether the parallel line test is met. Nevertheless, this strategy produces a great loss of information in the dependent variable. In the present analysis, five categories are used through the quintiles of the variable 'OW purchase intention' (quintile 1= 0 to 2; quintile 2= 3 to 4; quintile 3= 5 to 6; quintile 4= 7 to 8; quintile 5 = 9 to 10). SPSS version 25 was used to perform the analyses.

Prior to performing regression analysis, associations between independent variables (implicit and explicit attitudes) were checked. Thus, Pearson's correlations between implicit attitudes and the three factors are very low in absolute terms ($r_{\text{implicit},\text{factor1}}=0.07$, $p=0.04$; $r_{\text{implicit},\text{factor2}}=0.03$, $p=0.22$; $r_{\text{implicit},\text{factor3}}=0.09$, $p=0.01$) and correlations between explicit attitudinal factors are high but different from 1 ($r_{\text{factor1},\text{factor2}}=0.54$, $p=0.00$; $r_{\text{factor1},\text{factor3}}=0.45$, $p=0.00$; $r_{\text{factor2},\text{factor3}}=0.67$, $p=0.00$).

In regards to general sample, the model fits well. Thus, Chi-square is 186.07 ($df=4$, $p=0.00$) implying that the regression model with the independent variables produces a significant improvement over the baseline intercept-only model. Goodness of fit is very good (Chi-square=2810.30, $df=2752$, $p=0.21$). Nagelkerke pseudo-R is 0.25 (the model explains 25.0% of total variability) and the test of parallel lines using Logit as the link function shows that location parameters (slope coefficients) can be considered the same across response categories (Chi-square= 21.03, $df=12$, $p=0.05$).

Table 3 shows the parameter estimates for implicit and explicit attitudes, indicating that implicit attitudes do not contribute to explaining the OW purchase intention whereas the three explicit attitudes are relevant.

ADD TABLE 3

Purchase intention and attitudinal segmentation

After detecting which types of attitudes contribute significantly to explain 'OW purchase intention', cluster analysis was used to create different consumer profiles and discriminant analysis to test 2, 3 and 4 cluster solutions. The cluster analysis was run following Dolnicar's (2003) recommendations on the variables to introduce, clustering method and stability of results. Only significant variables were introduced (Gnanadesikan et al., 1995) and the implicit attitudes variable was ignored as it was considered a noisy non-informative variable (Fraiman et al., 2008). The K-Means method was used to minimise inertia (internal distance of clusters) and tests were carried out on 2, 3 and 4 clusters. Finally, discriminant analysis was used to test the goodness of the three solutions.

The most parsimonious solution with the greatest discriminatory power (stability) retains two clusters ($G_1=398$ and $G_2=292$) and all tests of equality of group means were significant. Discriminant analysis shows that Box's $M=36.46$ ($F=6.05$, $p=0.00$), canonical correlation $\rho=0.81$, Wilks' Lambda=0.35 ($\chi^2=720.84$, $p=0.00$) and correctly groups 98.4% of the cases. Table 4 shows the resulting segmentation with the description of each segment. There are no differences between the two segments in relation to age, education or wine consumption frequency. The significance of the differences between segments was calculated using the t-test for continuous variables, non-parametric tests for ordinal variables and the χ^2 test for the variable gender.

ADD TABLE 4

Segment 1 (*Moderately pro-organic*) is the most numerous (57.68%) with slightly greater female presence (53.5%), medium-high OW purchase intention (0.65 in the range 0-1, equivalent to quintile 3), higher attitudinal values for the three explicit attitudes than Segment 2, and only 25.1%

consumes only conventional wine. Its ordinal logistic model fits well and meets the proportional odds assumption.

Segment 2 (*Apathetic*) mainly comprises men (female = 43.8%) with low OW purchase intention (0.40 in the range 0–1, equivalent to quintile 2), showing significantly greater consumption of conventional wines (39.8% vs. 25.1% in the *Moderately Pro-organic* segment). This *Apathetic* segment has significantly lower attitudinal levels in all types of explicit attitudes. It is not very open to trying OW because, although OW is perceived as sustainable, the segment has not developed sufficient positive inclination to make the leap to consumption.

Comparison of the two ordinal regression models shows that Nagelkerkes' R^2 is 0.10 for segment 1 and 0.25 for segment 2. This means that the model for Segment 2 has better explanatory power, but since there are no other models for comparison it cannot be stated whether these R^2 are low or high. Note that in ordinal logistic models, R^2 coefficients do not represent the amount of explained variance but the proportional reduction in the absolute value of the log-likelihood measure.

Regarding implicit attitudes, it can be seen that for both segments the effect sizes can be described as 'moderately positive', although they are different from the quantitative perspective (Segment 1 with $M = 0.72$ and $SD = 0.51$, Segment 2 with $M = 0.60$ and $SD = 0.63$, $t = 2.63$, $p = 0.01$). This means that the two segments have approximately the same implicit preference towards OW, without spontaneous and unconscious attitudes contributing significantly to explain the OW purchase intention.

Conclusions

To the best of our knowledge, this study is the first to report on the potential influence of implicit and explicit attitudes on OW purchase intention, conducting attitudinal segmentation. Four major contributions of this research can be highlighted.

First, it has been found that only explicit attitudes (more strongly related to deliberate drivers) significantly influence OW purchase intention. In contrast, implicit attitudes (more strongly connected with non-conscious behaviour drivers) are not significant predictors of this intention. Although consumers associate OW with the organic category (green or eco-friendly products) and conventional wine with the non-organic category (non-green or non-eco-friendly products), neither generates greater OW purchase intention. This finding may mean that the association that consumers generate with the positive aspects of OW is mainly thoughtful, a conscious attitude that requires eco-friendly awareness, a willingness to pay more for OW and/or a disposition to make the effort to go to retailers where it is possible to buy OW.

From a managerial point of view, given that implicit attitudes are linked to individual feelings without conscious awareness and do not contribute to explain purchase intention, it would seem that psychological pricing, product design or an emotional communication strategy (that seek to increase purchase intention based on non-conscious drivers) are not appropriate. This is consistent with Vriens et al. (2016), who indicate that in the case of low importance of implicit drivers and high importance of explicit ones, it is more advisable to use those that explicitly activate the buyer (e. g. sales promotion, in-store wine-tasting). More particularly, it seems interesting to consider that the intrinsic attributes of the OW and engaging and arousal feelings should be addressed by

producers and marketers hand-in-hand to build a coherent marketing strategy. Producers should pursue better intrinsic attributes (healthier, higher quality and more pleasant to the palate), whereas marketers should improve positioning by working on explicit attitudes.

Second, this study finds very low correlations between explicit and implicit attitudes. It appears to support the idea that they are different attitudinal constructs that refer to different mental processes (e.g. Nosek and Smyth, 2007; Samson and Voyer, 2012).

Third, the association between OW and ‘organic’ as an eco-friendly product category has been found to be significant but not intense. That may be due to the dual reputation of wine in Spain (Nielsen and OeMv, 2009). Firstly, it is seen as a product with a significant cultural component (positive aspect). Secondly, it is considered an elitist product with low generational handover, high alcohol content and is produced using pesticides and additives. These negative elements generate a “less preferred” product image. In addition, the situation is made worse by the fact that consumers do not understand what ‘organic’ means (e.g. Rogers, 2011) nor can they distinguish between the various eco-labels in existence (e.g. Delmas and Lessem, 2017), so they do not recognise the benefits of OW. Furthermore, quite a large group of Spanish consumers surprisingly associates conventional wines with non-organic attributes (and therefore, with objectively very negative descriptors). Considering that modern viticulture is becoming increasingly environmentally friendly, it would be interesting for the industry to communicate and appropriately position wine production in relation to its sustainability.

Finally, potential consumers of OW can be divided into a pro-organic segment (which does not have a high purchase intention) and an apathetic (and numerous) segment with a low purchase intention. These consumers, however, live in a country with a long tradition of wine making, producing high quality wines, with high organic production and a small consumption of OW. This situation may stem from the fact that those with a positive attitude towards OW cannot buy it because of the difficulty in changing their habit of purchasing non-organic wine and because of the difficulty shown by the producers’ inefficient use of marketing tools. Thus in the Spanish market it is difficult to find OW on supermarket shelves and it is also highly likely that consumers do not see the real benefit of consuming OW over conventional wines. The first issue is in keeping with Vermeir and Verbeke (2006) who point out that perceived low availability of sustainable products may act as an inhibitor of purchase intentions. The second issue has also been cited in the literature as a generalised situation in many countries (e. g. Ogbeide et al., 2015).

The sector is of course facing a great challenge which can be tackled from three different perspectives: (1) get consumers to perceive that the intrinsic attributes of OW (especially those related to health) make it possible to pay a premium price, (2) improve the positioning of OW by getting emotions to play a significant role and (3) ensure OW reaches consumers (rather than consumers having to seek it out).

Limitations and future research

Two limitations can be highlighted. The first lies in the lack of robust attitudinal measures for wine in general and OW in particular. This fact limits the work of academics and professional researchers and so we call for research to develop valid, reliable measures. The second limitation is contextual. The study took place in a country where consumption of conventional wine has

dropped markedly (2000–2015) due to a strong government campaign against alcohol consumption and strong competition from substitute products (beer, soft drinks). The transition of Spanish consumers towards OW slowed down during the financial crisis (2007–2014) and, although the market is pro-organic, the main challenge currently is to increase the level of consumption. This situation is a limitation for cross-country comparisons, but also points to the need for future studies to contextualise their findings.

Finally, given the enormous change in the positioning of OW and the consolidation of new segments (e.g. Millennials, wine tourists), greater research effort is needed into the variables that would help to promote OW consumption from the consumer perspective.

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Table 1 Sample profile (n=690)

Criteria		n (%)
Gender	Male	359 (50.6)
	Female	341 (49.4)
Education	Primary	52 (7.5)
	Secondary	68 (9.9)
	Bachelor/Job training	169 (24.5)
	In college career	134 (19.4)
	University degree	267 (38.7)
Age (Mean=37 years old)	18–30	266 (38.6)
	31–50	230 (33.3)
	51–70	194 (28.1)
Wine consumption	No consumption	186 (27.0)
	Only conventional	214 (31.0)
	Conventional>Organic	220 (32.9)
	Conventional=Organic	50 (7.2)
	Conventional <Organic	17 (2.5)
	Only organic	3 (0.4)
Frequency of consumption	Very sporadically	81 (16.1)
	Sometimes a month	136 (27.0)
	2–3 times a month	86 (17.1)
	One time per week	84 (16.7)
	2–3 days a week	81 (16.1)
	Daily	36 (7.1)

Table 2. Reliability and validities of final factors

Factor	Item	CR	AVE	λ	Discriminant Validity			
					Factors	r	SE	CI of r
1	Organic wines are/have ___ than conventional ones,	0.81	0.59	0.67	F ₁ -F ₂	0.66	0.03	0.59-0.72
	LIK03. Healthier			0.89	F ₁ -F ₃	0.53	0.04	0.46-0.60
	LIK04. Superior quality			0.72	F ₂ -F ₃	0.84	0.02	0.80-0.89
	LIK06. Tastier							
2	DS18. Not appealing / Appealing	0.77	0.52	0.74				
	DS19. Unpleasant / Pleasant			0.75				
	DS25. Uncomfortable / Comfortable			0.72				
3	DS26. Sad / Happy	0.81	0.59	0.84				
	DS29. Not socializing / Socializing			0.66				
	DS31. Depressing / Euphoric			0.80				

CR=Composite reliability, AVE=Average variance extracted, λ =Confirmatory factor loadings, r =Pearson correlation coefficient, SE=Standard error, CI=Confidence interval.

Table 3. Summary of ordinal logistic model for intention to purchase OW (n=690)

Model term	Parameter Estimate	S.E.	Wald	p-value	95% CI
Implicit attitudes	0.23	0.13	3.41	0.06	-0.01, 0.48
Factor 1: Att. toward intrinsic attributes	0.06	0.02	17.06	0.00	0.03, 0.09
Factor 2: Att. toward engaging feelings	0.14	0.03	20.91	0.00	0.08, 0.20
Factor 3: Att. toward arousal feelings	0.13	0.03	16.44	0.00	0.07, 0.19

All model terms have 1 degree of freedom.
Link function: Logit, S.E.= Standard Error, CI = confidence interval

Table 4. Results for each segment

	Segment 1	Segment 2	Tests
Segment denomination	<i>Moderate Pro-organic</i>	<i>Apathetic</i>	
Purchase intention (0 –1 ranged)	M=0.65 (quintile 3)	M=0.40 (quintile 2)	U= -8.98**
Segment size (n)	398 (57.68%)	292 (42.32%)	
Gender	Female=53.5%	Female=43.8%	$\chi^2=6.32^*$
Main type of wine consumed	Only conventional (25.1%)	Only conventional (39.0%)	Z=2.03**
Summary of ordinal logistic models			
Model fitting information	$\chi^2=40.32^{**}$	$\chi^2=68.47^{**}$	
Goodness of fit	$\chi^2=1637.11^{ns}$	$\chi^2=1124.76^{ns}$	
Nagelkerke R –square	0.10	0.22	
Parameter estimates			
Implicit attitude	0.25 (Wald=1.92 ^{ns})	0.21 (Wald=1.40 ^{ns})	
Explicit Att. intrinsic attributes	0.06 (Wald=4.56*)	0.10 (Wald=11.43**)	
Explicit Att. engaging feelings	0.12 (Wald=7.43**)	0.21 (Wald=17.27**)	
Explicit Att. arousal feelings	0.11 (Wald=6.43*)	0.16 (Wald=12.26**)	
Parallel lines test	$\chi^2=17.51^{ns}$	$\chi^2=16.06^{ns}$	
Descriptive statistics (0–1 ranged)			
Implicit attitudes	M=0.72 SD=0.50	M=0.60 SD=0.63	t=2.63**
Explicit Att. intrinsic attributes	M=0.74 SD=0.12	M=0.41 SD=0.15	t=31.11**
Explicit Att. engaging feelings	M=0.50 SD=0.10	M=0.35 SD=0.10	t=19.94**
Explicit Att. arousal feelings	M=0.52 SD=0.10	M=0.40 SD=0.11	t=14.74**
* p<0.05, ** p<0.01, ns= not significant, M=Mean, SD=Standard deviation, t=t –test, χ^2 =Chi –square test, U= U Mann –Whitney test; Z= Kolmogorov –Smirnov test			