ELSEVIER

Contents lists available at ScienceDirect

Food Research International

journal homepage: www.elsevier.com/locate/foodres





Emotional response to sherry wines and its relationship with emotional intelligence, level of expertise and gender

Alberto Paramio ^{a,c}, Serafín Cruces-Montes ^{a,c}, Diego Gómez-Carmona ^{b,c}, Antonio Romero-Moreno ^{a,c,*}, Antonio Zayas ^{a,c}

- ^a Department of Psychology, Faculty of Education Sciences, University of Cádiz, Puerto Real 11519, Spain
- b Department of Marketing and Communication, Faculty of Communication and Social Sciences, Campus de Jerez, University of Cádiz, Jerez 11406, Spain
- ^c INDESS (University Institute for Sustainable Social Development), University of Cádiz, Jerez de la Frontera, 11406, Spain

ARTICLE INFO

Keywords: Emotional response Sherry wine Emotional intelligence Bling tasting Wine consumers Emotion

ABSTRACT

Emotional elicitation during wine consumption is a complex fenomena based on subjective experience and influence by physiological, cognitive and behavioural changes. The present study used a quasi-experimental design to examine consumers' emotional responses during blind tastings of sherry wines, considering variables such as consumer experience, gender and Emotional Intelligence (EI). 66 participants were classified as non-expert (34) and expert (32) consumers to participate in blind tastings. Their emotional responses were measured using the EsSense25 Scale and the Perceived Emotional Intelligence was assessed through the Trait Meta-Mood Scale. Few differences were observed on emotional elicitation based on gender or consumer experience (non-expert vs expert), however the interaction of these variables was a good predictor of emotional response variance. Wine type also has an effect on emotional response, emphasising the role of sherry wine characteristics in consumer emotions. Furthermore, the Emotional Attention, one of the three dimensions of Emotional Intelligence, was found as a good predictor for the emotional responses to wine consumption. This relationship may be a key factor in understanding the differences between responsible consumption and excessive consumption, as indicated by research focused on binge drinking.

1. Introduction

Emotions are subjective and complex experiences characterised by physiological, cognitive, and behavioural changes (Statharakos et al., 2022). Paul Ekman (1984, p. 319) defines emotions as "universal and universally recognised experiences characterised by physiological changes, facial expressions, and behaviours." These can be primary or secondary and span a continuous effect from those experienced more negatively to those experienced positively (Plutchik, 1991).

The role of emotion in consumption has been a research topic since early studies on its use in advertising (Holbrook & O'Shaughnessy, 1984; Mizerski & White, 1986) and in processing affective and hedonic responses through consumption (Westbrook, 1987) from the mideighties. Earlier studies also considered the role of emotions as a mediator in addiction (Cooper et al., 1988; Russell & Mehrabian, 1975). However, these studies focus on the impact of emotion in transforming consumption into abuse. This research line, still ongoing today (González-Yubero et al., 2019), focuses on negative emotions and the

psychopathology framing alcohol abuse, hence opposing the promotion of responsible consumption and eliciting positive emotions through sporadic and moderate consumption (Danner et al., 2017).

Emotional elicitation analysis is not exclusive to wine, as the elicitation of positive and negative emotions has been analysed in various foods (Desmet & Schifferstein, 2008; Kim et al., 2017) and drinks, both alcoholic (Worch et al., 2020) and non-alcoholic (Barker et al., 2021). Scale and psychophysiological records are considered among the different methods to assess emotional elicitation (Richins, 1997). Within the first group are instruments like the EsSense Profile® (King & Meiselman, 2010), an emotional lexicon dedicated to the evaluation of food products in general which uses a list of 39 emotions on a 9-point Likert scale and has a shorter 25-item version (Nestrud et al., 2016). In both versions, the internal structure of the lexicon list was the same.. Some studies usually create emotion lists for their specific purpose (Jiang et al., 2014). Other authors (Porcherot et al., 2010; Spinelli et al., 2014) highlight that the specificity of the lexicon would be one factor allowing better product discrimination, with a higher number of discriminating

^{*} Corresponding author at: Avda. Republica Saharaui, 12, 11519 Puerto Real, Cádiz, Spain. *E-mail address*: antoniofrancisco.romero@uca.es (A. Romero-Moreno).

emotions. Furthemore, the context had an important effect on the intensity with which emotions were experienced (Pedroza & Herrell, 2022). However, using scales that use a general lexicon would facilitate comparing consumers' responses from other countries (Mora et al., 2020). The use of lexicons specific to each country or cultural context would make comparisons between them more difficult if they are not first adapted to the new context (Van Zyl & Meiselman, 2016), especially considering the wide international export of sherry wines.

Silva et al. (2016) stated that wine, compared to other alcoholic beverages, mainly evokes pleasant, low-activation emotions related to feelings of relaxation, calm, or love. However, even though emotional elicitation is a notable tool for assessing and understanding purchase decisions, using it independently may be biased for proper consumer behaviour evaluation (Ng & Hort, 2015; Thomson & Coates, 2021). Studies have also examined the influence of demographic variables such as gender and age on the emotional evocation of wine (Criado et al., 2022; Mora et al., 2018). In general, wine evoked higher ratings in emotional response for men than for women. Still, women reported more significant differences between wines and could discriminate between wines about emotions such as joy. Men felt satisfied, joyful and confident, correlating with taste, while women felt caring, peaceful and understanding (Mora et al., 2018). In terms of age segments, all wines evoked significantly higher scores in older adults for most emotional terms. The 55 + population perceived greater emotional intensity than middle-aged and young adults. However, young adults showed greater discrimination between wines than other age groups regarding emotional responses towards the set of wines analysed (Mora et al., 2018). Different levels of involvement, knowledge and experience are also related to different emotional profiles (Calvo-Porral et al., 2018; Souza-Coutinho et al., 2020).

The level of experience and knowledge about the world of wine plays a relevant role in our work. Gómez-Carmona et al. (2023) suggest that consumers with a higher level of wine knowledge and experience due to wine tourism experiences or participation in wine-related activities is positively correlated with better evaluations by these consumers. This study reinforces the findings of Van Ittersum et al. (2003), who indicate that purchase behaviour is based on the cognitive process leading to the consumer's evaluation of product attributes. Consumers' experiences condition their consumption and purchase patterns.

Sherry wines are southern Spanish wines produced from Palomino, Muscat and Pedro Jimenez grapes and are characterised by their wide variety of types and characteristics (Consejo Regulador del Vino de Jerez, 2023). These wines have been studied from an oenological, economic and historical perspective (López-Guzmán et al., 2014; Pozo-Bayón & Moreno-Arribas, 2016). Few studies focus on the sherry wine consumer (Cruces-Montes et al., 2020), and none have assessed the emotional elicitation of these wines. Therefore, analysing the emotional profiles of consumers can facilitate a better segmentation of consumers, as has happened in the case of other types of wine (Danner et al., 2016; Mora et al., 2018).

A crucial variable to understanding human emotional response is Emotional Intelligence (Mayer & Salovey, 1993; Salovey & Mayer, 1990), defined as "the ability to accurately perceive, assess, and express emotion; the ability to access and/or generate feelings when facilitating thoughts; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth" (Mayer et al., 1999, p. 267). Evidences suggests its importance in alcohol consumption, though most studies focus mainly on its ability to prevent abusive consumption behaviours (Kun & Demetrovics, 2010). Others point to its potential to predict consumption-related behaviours (Ahn, 2022) and purchase decisions over product knowledge (Kidwell et al., 2008; Sadachar et al., 2017). No studies have researched the relationship between Emotional Intelligence and emotional elicitation in wine consumption. The wine industry thus has an opportunity to apply research results, identifying appropriate emotional profiles to connect consumers and advertising campaigns and

product labelling, as well as directing products to specific market segments.

Therefore, the objectives of the present study are the following:

1. To explore the emotional response to sherry wines among male vs (female), expert vs non-expert consumers, during different blind tastings. 2. To analyse the clustering of emotional responses and determine the relationship of the resulting clusters with Emotional Intelligence.

2. Materials and methods

2.1. Experimental design

The present study was conducted as a quasi-experimental tasting design with non-equivalent groups in size (non-expert versus expert consumers) without a pre-test. Experimental groups were balanced by gender and age. (Bono-Cabre, 2012). The attributes to be rated are selected from a previously established glossary, the EsSense25 (Nestrud et al., 2016).

This design was selected because it has proven to be a method of high internal validity with the ability to generalise results to similar experimental contexts (Maciejewski, 2020; Findley et al., 2021).

As a method of reducing the biases inherent to this type of design, we will balance the groups for variables that could affect the emotional evocation of consumption as gender, age and expertise (Cicchetti, 2004.) and therandomisation of the order of the tastings to avoid fatigue and performance biases and to guarantee greater internal reliability of the experimental stimuli, given the greater control exercised over the experimental manipulation.

2.2. Instruments

The questionnaire administered to the tasting participants consisted of a set of items divided into three sections:

Demographic section with five items: Gender, age, and three are used to check the non-expert or expert consumer status, carried out before the tasting.

Trait Meta-Mood Scale (TMMS-24): A twenty-four-item questionnaire conducted after the tasting. This questionnaire measures Perceived Emotional Intelligence into three dimensions: Emotional Attention (EA) (8 items), Emotional Clarity (EC) (8 items), and Emotional Repair (ER) (8 items) (Salovey et al., 1995).

An emotional response lexicon list, EsSense25, was used in this section. The EsSense25 is a shorter version of the EsSense Profile® (King & Meiselman, 2010) with only 25 terms. The term *curious* was also incorporated, as suggested in previous research for studies with Spanish consumers (Mora et al., 2018). The items were assessed on a ten-point scale ranging from 0 (not at all) to 9 (very much). A generic lexicon list was chosen to facilitate future comparisons with the same instrument in different countries. This test is carried out during the tasting. After each glass of wine, the test is completed. The same information is collected for each wine.

2.3. Wine selection

The six most representative types of sherry wines according to the "Consejo Regulador de las Denominaciones de Origen Jerez-Xérès-Sherry, Manzanilla de Sanlúcar de Barrameda y Vinagre de Jerez" were selected to cover the full spectrum of sherry wine diversity in terms of organoleptic characteristics, alcohol percentage, grape type, ageing and fortification (Table 1).

2.4. Consumer sample

Wine tasters selected for the study were contacted via telephone and email. The researchers selected 66 participants, of which 34 were nonexpert consumers (NEC) and 32 were considered expert sherry wine

Table 1Sherry wines selected for the blind tastings and their characteristics.

	Aging	Alcohol %	Grape
Fino (A)	Biological	15 %	Palomino
Amontillado (D)	Biological, Oxidative	17 % - 20 %	Palomino
Palo cortado (E)	Biological, Oxidative	18 % - 20 %	Palomino
Oloroso (B)	Oxidative	18 % - 20 %	Palomino
Cream (C)	Oxidative	15.5—22 %	Palomino, Pedro Ximénez
Pedro Ximénez (F)	Oxidative	15—22 %	Pedro Ximénez

consumers (EC). The criterion for identifying consumers was the consumption of one small glass of wine (1.5 units of alcohol) at least once or twice a month. These experts had to meet the following criteria to be included in the study: (1) Regularly (at least 2 per month) participate in activities related to sherry wines. (2) Have attended wineries and vineyards in the appellation on over one occasion last year. (3) Work directly in the harvesting or production of sherry wines. In contrast, nonexpert consumer could not meet any of these criteria. That is, they are subjects who do not participate in activities related to sherry wine. These subjects do not carry out tastings, do not visit wineries, and do not attend the vineyard. Nor do they have a job that is related to the harvesting or production of wine. These groups of wine consumers were closely paired in relation to their gender (RT=18 men and 16 women; ET=18 men and 14 women) and age (RT mean = 48.59; SD=11.84, ET mean = 46.35; SD=12.51).

2.5. Ethical statement

The study was conducted in compliance with the Declaration of Helsinki of 2013 (Seventh revision, 64th Meeting, Fortaleza) and the Spanish Organic Law 3/2018, of December 5, Protection of Personal Data and Guarantee of Digital Rights in accordance with the Regulation (EU) 2016/679 of the European Parliament and of the Council, of April 27, 2016.

Participants were guaranteed confidentiality and anonymity in the informed consent included. They did not receive any reward for participating in the study.

2.6. Procedure

The participants were invited to attend the blind tasting in person, which took place in the tasting room of the Institute for Social and Sustainable Research (INDESS), of the University of Cadiz, between April and June 2023. A total of eight sessions were needed. These were balanced, with four at 11:00 am. and four at 5:00 pm.

Once they arrived at the tasting room, the participants were distributed in the eight sessions, six sessions with eight experimental subjects and two sessions with nine subjects each. The subjects were distributed among the available tables, and six blind glasses (ISO 3591:1977) covered with lids were waiting for them with the wines already poured. This setting was selected to prevent participants from seeing the wine's colour, which could give them information about the wine they would taste. The presentation order of stimuli were randomised according to a 6-letter code (identifying each letter with a wine) to avoid a test pattern derived from consumption in the same position as wine and the primacy and recency effect. This design ensures adequate internal validity due to the possibility of controlling the impact of the independent variables and greater control of the research setting (Zikmund, 2003).t. The order of consumption of each group was as follows: Group 1: CBEFAD; Group 2: BAFEDC; Group 3: DACFBE; Group 4: BECDFA; Group 5: ABEDCF; Group 6: AEBCFD; Group 7: FADC E B; Group 8: E B A C D F (A: Fino; B: Oloroso; C: Cream; D: Amontillado;

E: Palo Cortado; F: Pedro Ximenez). This coding was used internally to organise the tastings and was not shown to the consumers to avoid biasing their responses.

Firstly, participants read and signed the informed consent form. After completing the informed consent, they answered the demographic and the TMMS-24. After all participants had finished, the researcher indicated that the first wine glass could be uncovered and tasted. EsSense25 section was then enabled so that participants could rate the emotional evocation referred to in each item. A few minutes were left for participants to get the taste of the wine out of their mouth with water as they were finished with the first wine glass. Then, they were allowed to move on to the next wine glass. This procedure was followed with each of the six sherry wines selected for the experiment. The tasting was concluded once the last wine had been tasted and the items relating to it had been filled.

2.7. Data analysis

Descriptive and radar charts (Flanagan et al., 2015) were used to summarise and present the quantitative variables of the emotional responses elicited by wine consumption in the different groups and according to gender. Student's T analyzes were conducted to determine differences in emotional elicitation (dependent variable) by gender and level of expertise.

A Generalized Linear Model (GLM) was carried out with the level of expertise group, gender and wine as independent factors and the interactions group*gender, wine*gender, wine*group and wine*group*gender included in the model to explain the variance of the emotional response to the lexicon-items (dependent variables). The Tuckey's HSD post-hoc correction test was used for the multiple comparisons of the wine type emotional elicitation.

Principal Component Analysis (PCA) was used with the quatrimax rotation method to cluster the emotional elicitation variables, which reduces the number of factors needed to explain the variables (Corner, 2009). The resulting factors will be correlated non-parametrically using Spearman's rank correlation coefficient with the Emotional Intelligence variables (EA, EC and ER).

IBM SPSS 26 and XLSTAT version 2022.1 were the software used to conduct the analyses. A significance level of 0.05 was used for all of the tests.

3. Results

3.1. Measuring emotional response to blind tastings

In Table 2, the means of the EsSense25 lexicons according to gender, level of knowledge and type of wine are shown. To facilitate the appreciation of differences in emotional elicitation according to gender and level of expertise, radar charts have been made for each group involved in the tastings (Fig. 1A, 1B, 1C and 1D).

However, these wine consumer characteristics were not determinant by themselves in explaining this differences, with significant differences by gender only for the items Good (F=4.597; p < 0.05), Bored (F=14.022; p < 0.001) and Interested (F=8.275; p < 0.01), wine expertise groups, significant differences were only found in Happy (F=12.799; p < 0.001), Disgusted (F=9.055; p < 0.01), Bored (F=10.062; p < 0.01) and Aggressive (F=14.357; p < 0.001) for the total mean of all sherry wines as dependent variables in the multiple Students' T analyzes. The reason for this is that the type of wine also plays a role in explaining emotional responses. Therefore, it was considered convenient to carry out a GLM containing all the variables whose interaction would help us to predict the emotional response during the tastings.

 Table 2

 Emotional elicitation means by group, gender and sherry wine type.

CC	Man						natured							Aggressiv
		Fino	7	4.83	4.67	4.67	3.89	1	0.94	3.11	4.72	0.89	4.11	1.39
		Amontillado	7,17	4.67	5	4.78	4.94	0.78	1.17	3.67	5.06	0.61	4.33	1.56
		Palo cortado	6,72	4.11	4.56	3.61	3.94	1.17	0.83	2.89	4.33	1.11	3.33	1.78
		Oloroso	6,33	3.78	4.33	3.67	4	1	1	3.28	4.33	1.11	3.67	2.28
		Cream	5,28	3.06	4.22	3.5	3.67	1	0.83	2.83	4.17	1.44	2.72	0.94
		Pedro Ximénez	6	3.17	4.61	3.44	4.61	0.78	1.22	4.22	4.72	1.17	2.83	0.78
		Total	6,42	3.94	4.56	3.94	4.18	0.95	1	3.33	4.56	1.06	3.5	1.45
	Woman	Fino	6,07	3.64	3.36	3.57	2.71	0.86	0.36	1.57	3.86	0.93	2.93	1.57
		Amontillado	6,64	3.71	3.79	4	3.07	0.43	0.71	2.79	4.21	0.57	3.14	1.57
		Palo cortado	6,57	3.21	3.71	4	3.21	1.21	1.14	2.79	3.71 3.14	1	3.57	1.5 1.43
		Oloroso Cream	5,86 5,93	2.64 2.21	3.21 3.43	3.5 3.21	2.57 3.29	0.5 0.64	0.93 0.93	2 2.64	3.5	1.14 1.29	2.43 1.86	0.5
		Pedro	6,43	2.36	3.57	3.21	3.43	1.07	1.07	3.36	3.43	1.43	2.5	0.29
		Ximénez	6.25	2.06	2 51	2 50	2.05	0.70	0.96	2 52	264	1.06	2.74	1 14
	Total	Total	6,25	2.96	3.51 4.09	3.58 4.19	3.05	0.79 0.94	0.86	2.52	3.64 4.34	1.06 0.91	2.74 3.59	1.14 1.47
	Total	Fino Amontillado	6,59 6,94	4.31 4.25	4.09	4.19	3.37 4.13	0.94	0.69 0.97	2.44 3.28	4.69	0.59	3.81	1.56
		Palo cortado	6,66	3.72	4.19	3.78	3.63	1.19	0.97	2.84	4.06	1.06	3.44	1.66
		Oloroso	6,13	3.28	3.84	3.59	3.38	0.78	0.97	2.72	3.81	1.13	3.12	1.91
		Cream	5,56	2.69	3.88	3.38	3.5	0.84	0.88	2.75	3.87	1.37	2.34	0.75
		Pedro	6,19	2.81	4.16	3.34	4.09	0.91	1.16	3.84	4.16	1.28	2.69	0.56
		Ximénez Total	6,34	3.51	4.1	3.79	3.68	0.88	0.94	2.98	4.16	1.06	3.17	1.32
EC	Man	Fino	5,65	4.12	4.1 4	3.79 4.06	3.08	0.88	1.53	2.98 1.88	3.82	1.47	3.17	2.65
LC.	iviaii	Amontillado	6,28	3.78	4.06	3.94	2.89	1.11	0.89	1.89	4	1.22	4	2.67
		Palo cortado	6,94	3.33	4.83	4.5	3.56	0.78	1.39	3.5	4.44	0.83	4.28	2.28
		Oloroso	6,17	3	4.5	3.61	3.44	0.78	1.44	2.89	4.17	0.89	3.44	1.83
		Cream	5,63	2.84	3.37	2.47	3.74	1.47	1.79	3.37	3.79	1.47	2.68	1.42
		Pedro Ximénez	5,94	2.72	4.17	3.17	4.11	1.33	1.44	3.56	3.83	1.39	2.67	1.11
		Total	6,1	3.29	4.15	3.61	3.47	1.06	1.42	2.86	4.01	1.21	3.39	1.98
	Woman	Fino	6	4.6	4.27	4.13	3.8	1.33	0.8	3.13	4.73	0.93	3.2	2.27
		Amontillado	5,81	3.87	4.5	4.13	3.75	1.31	1.44	3.63	4.5	2.38	3.94	1.69
		Palo cortado	6,38	4.75	4.31	4.31	4.06	1.5	1.19	3.44	4.44	1.81	3.94	1.44
		Oloroso	6,24	4.18	4.41	4.41	3.59	1.41	1 0.47	2.65 3.53	4.59	1.65 1.27	3.59	1.94 0.8
		Cream Pedro	6,67 5,53	4.33 4.41	5.6 3.94	4.4 4.88	4.6 3.82	0.4 1.18	0.47	4	5.07 4.76	1.47	4.2 4.18	1
		Ximénez	6.00	4.25	4.40	4.20	2.02	1.0	0.06	2.4	4.60	1.50	2.04	1.50
	Total	Total	6,09	4.35	4.49 4.12	4.39 4.09	3.93	1.2	0.96	3.4	4.68 4.25	1.59 1.22	3.84	1.52
	Total	Fino Amontillado	5,81	4.34 3.82		4.09	3.41	1.09	1.19	2.47 2.71	4.25		3.25	2.47 2.21
		Palo cortado	6,06 6,68	3.82 4	4.26 4.59	4.03 4.41	3.29 3.79	1.21 1.12	1.15 1.29	3.47	4.24 4.44	1.76 1.29	3.97 4.12	1.88
		Oloroso	6,2	3.57	4.46	4	3.51	1.09	1.23	2.77	4.37	1.26	3.51	1.89
		Cream	6,09	3.5	4.35	3.32	4.12	1.05	1.21	3.44	4.35	1.38	3.35	1.15
		Pedro Ximénez	5,74	3.54	4.06	4	3.97	1.26	1.14	3.77	4.29	1.43	3.4	1.06
		Total	6,1	3.79	4.31	3.98	3.69	1.13	1.2	3.11	4.32	1.39	3.6	1.76
tal	Man	Fino	6,34	4.49	4.34	4.37	3.49	0.94	1.23	2.51	4.29	1.17	3.71	2
	*******	Amontillado	6,72	4.22	4.53	4.36	3.92	0.94	1.03	2.78	4.53	0.92	4.17	2.11
		Palo cortado	6,83	3.72	4.69	4.06	3.75	0.97	1.11	3.19	4.39	0.97	3.81	2.03
		Oloroso	6,25	3.39	4.42	3.64	3.72	0.89	1.22	3.08	4.25	1	3.56	2.06
		Cream	5,46	2.95	3.78	2.97	3.7	1.24	1.32	3.11	3.97	1.46	2.7	1.19
		Pedro Ximénez	5,97	2.94	4.39	3.31	4.36	1.06	1.33	3.89	4.28	1.28	2.75	0.94
		Total	6,26	3.61	4.36	3.78	3.82	1.01	1.21	3.1	4.28	1.13	3.44	1.72
	Woman	Fino	6,03	4.14	3.83	3.86	3.28	1.1	0.59	2.38	4.31	0.93	3.07	1.93
		Amontillado	6,2	3.8	4.17	4.07	3.43	0.9	1.1	3.23	4.37	1.53	3.57	1.63
		Palo cortado	6,47	4.03	4.03	4.17	3.67	1.37	1.17	3.13	4.1	1.43	3.77	1.47
		Oloroso	6,06	3.48	3.87	4	3.13	1	0.97	2.35	3.94	1.42	3.06	1.71
		Cream	6,31	3.31	4.55	3.83	3.97	0.52	0.69	3.1	4.31	1.28	3.07	0.66
		Pedro Ximénez	5,94	3.48	3.77	4.13	3.65	1.13	0.94	3.71	4.16	1.45	3.42	0.68
		Total	6,17	3.71	4.03	4.01	3.52	1.01	0.91	2.99	4.19	1.34	3.33	1.34
	Total	Fino	6,2	4.33	4.11	4.14	3.39	1.02	0.94	2.45	4.3	1.06	3.42	1.97
		Amontillado	6,48	4.03	4.36	4.23	3.7	0.92	1.06	2.98	4.45	1.2	3.89	1.89
		Palo cortado	6,67	3.86	4.39	4.11	3.71	1.15	1.14	3.17	4.26	1.18	3.79	1.77
		Oloroso	6,16	3.43	4.16	3.81	3.45	0.94	1.1	2.75	4.1	1.19	3.33	1.9
		Cream	5,83	3.11	4.12	3.35	3.82	0.92	1.05	3.11	4.12	1.38	2.86	0.95
		Pedro	5,96	3.19	4.1	3.69	4.03	1.09	1.15	3.81	4.22	1.36	3.06	0.82
		Ximénez Total	6,22	3.65	4.21	3.88	3.68	1.01	1.07	3.05	4.24	1.23	3.39	1.55

Adventurous	Loving	Active	Mild	Understanding	Nostalgic	Wild	Pleasent	Worried	Satisfied	Curious	Secure	Tame	Warm
3.94	3.61	4.5	2.94	3.5	3.61	2.5	4.5	1.11	4.33	3.78	4	1.39	4.22
4	4.5	4.67	3.11	4.56	4.44	2.44	4.67	1.44	4.72	4.06	4.83	1.22	4.5
3.83	3.39	4.11	2.28	3.06	3.28	2.39	3.67	1.11	4.11	3.94	4.11	1.5	3.44
3.17	3.72	3.78	2.67	3.44	3.78	2.11	4	1.61	4.17	3.44	3.61	0.89	3.78
2.83	4.28	2.83	3.89	3.06	3.39	2.11	4.22	0.89	3.56	2.78	3.17	1.5	4.17
2.28	5.11	3.11	4.39	3.44	3.06	2.11	4.11	0.83	4	3.17	3.5	1.39	4.83
3.34	4.1	3.83	3.21	3.51	3.59	2.28	4.19	1.17	4.15	3.53	3.87	1.31	4.16
2.43	2.07	3.71	1.29	2.36	2	1.86	3.21	0.93	3.5	3.43	3.5	0.93	2
3.43	3.21	3.5	2.36	3.14	3.21	2.43	3.71	0.71	4.29	3.86	4.07	0.64	3.36
3.07	3.07	3.79	2.07	2.93	2.71	2.71	3.93	0.57	3.29	3.93	3.64	0.79	2.36
2.5	2.79	3.36	1.71	1.86	1.86	1.79	3.07	1.43	2.86	3.07	3.29	1.43	2.93
1.64	3.5	2.71	2.43	2.5	2.64	1.14	3.14	0.36	2.57	1.93	2.36	1.71	3.29
1.57	4	2.29	3.07	3.36	2.86	0.93	4.07	0.57	3.36	1.79	3.5	1.71	4.21
2.44	3.11	3.23	2.15	2.69	2.55	1.81	3.52	0.76	3.31	3	3.39	1.2	3.02
3.28	2.94	4.16	2.22	3	2.91	2.22	3.94	1.03	3.97	3.62	3.78	1.19	3.25
3.75	3.94	4.16	2.78	3.94	3.91	2.44	4.25	1.13	4.53	3.97	4.5	0.97	4
3.5	3.25	3.97	2.19	3	3.03	2.53	3.78	0.87	3.75	3.94	3.91	1.19	2.97
2.88	3.31	3.59	2.25	2.75	2.94	1.97	3.59	1.53	3.59	3.28	3.47	1.12	3.41
2.31	3.94	2.78	3.25	2.81	3.06	1.69	3.75	0.66	3.13	2.41	2.81	1.59	3.78
1.97	4.63	2.75	3.81	3.41	2.97	1.59	4.09	0.72	3.72	2.56	3.5	1.53	4.56
2.95	3.67	3.57	2.75	3.15	3.14	2.07	3.9	0.99	3.78	3.3	3.66	1.27	3.66
3.35	2.94	3.82	2.29	2.71	2.18	2.24	3.18	1.53	3.12	3.06	2.59	1.82	2.76
3.33	2.89	4	2.11	2.94	2.83	2.78	3.72	0.94	3.94	3.22	3.06	0.94	2.44
3.5	3.78	4.11	2.89	2.94	2.67	2.06	4.28	1.33	4.5	4.28	3.94	0.89	3.61
3	3	3.11	1.94	2.06	3.22	2.06	3.56	1.67	3.67	3.06	2.83	1.56	2.11
2.05	3.42	2.58	3.53	2.89	2.63	1.58	3.68	1.32	3.16	2.42	2.63	1.53	3.68
1.56	3.78	2.5	4.17	3.67	3.5	1.22	4.17	1	3.67	2.17	3.28	1.11	4.28
2.79	3.31	3.34	2.83	2.87	2.84	1.98	3.77	1.3	3.68	3.03	3.06	1.31	3.16
3.47	3.13	4	3.07	3.53	2.87	3.33	4.07	0.87	3.67	3.4	3.27	1.53	3.47
3.88	3.69	3.88	2.69	3.69	3.13	3.06	3.75	1.94	3.88	3.88	3.5	1.62	3.44
3.38	3.31	3.5	2.94	3.69	3.38	2.69	4.19	1.44	4.69	3.81	3.94	1.06	3.63
3.24	3.18	3.12	2.71	3.82	3.65	2.59	4.12	1.59	3.88	3.65	3.65	1.24	3.47
3	5.07	3.53	4	4.4	5.33	2.67	5.4	0.27	5.33	3.6	4.13	0.67	5.07
3	4.41	3.06	3.82	3.71	4.24	2.18	4.35	0.76	4.76	3.59	4.18	1.24	4.29
3.32	3.79	3.5	3.2	3.8	3.76	2.74	4.3	1.16	4.36	3.66	3.78	1.23	3.89
3.41	3.03	3.91	2.66	3.09	2.5	2.75	3.59	1.22	3.37	3.22	2.91	1.69	3.09
3.59	3.26	3.94	2.38	3.29	2.97	2.91	3.74	1.41	3.91	3.53	3.26	1.26	2.91
3.44	3.56	3.82	2.91	3.29	3	2.35	4.24	1.38	4.59	4.06	3.94	0.97	3.62
3.11	3.09	3.11	2.31	2.91	3.43	2.31	3.83	1.63	3.77	3.34	3.23	1.4	2.77
2.47	4.15	3	3.74	3.56	3.82	2.06	4.44	0.85	4.12	2.94	3.29	1.15	4.29
2.26	4.09	2.77	4	3.69	3.86	1.69	4.26	0.89	4.2	2.86	3.71	1.17	4.29
3.04	3.53	3.42	3	3.31	3.27	2.34	4.02	1.23	4	3.32	3.4	1.27	3.5
3.66	3.29	4.17	2.63	3.11	2.91	2.37	3.86	1.31	3.74	3.43	3.31	1.6	3.51
3.67	3.69	4.33	2.61	3.75	3.64	2.61	4.19	1.19	4.33	3.64	3.94	1.08	3.47
3.67	3.58	4.11	2.58	3	2.97	2.22	3.97	1.22	4.31	4.11	4.03	1.19	3.53
3.08	3.36	3.44	2.31	2.75	3.5	2.08	3.78	1.64	3.92	3.25	3.22	1.22	2.94
2.43	3.84	2.7	3.7	2.97	3	1.84	3.95	1.11	3.35	2.59	2.89	1.51	3.92
1.92	4.44	2.81	4.28	3.56	3.28	1.67	4.14	0.92	3.83	2.67	3.39	1.25	4.56
3.06	3.7	3.59	3.02	3.19	3.22	2.13	3.98	1.23	3.91	3.28	3.46	1.31	3.66
2.97	2.62	3.86	2.21	2.97	2.45	2.62	3.66	0.9	3.59	3.41	3.38	1.24	2.76
3.67	3.47	3.7	2.53	3.43	3.17	2.77	3.73	1.37	4.07	3.87	3.77	1.17	3.4
3.23	3.2	3.63	2.53	3.33	3.07	2.7	4.07	1.03	4.03	3.87	3.8	0.93	3.03
2.9	3	3.23	2.26	2.94	2.84	2.23	3.65	1.52	3.42	3.39	3.48	1.32	3.23
2.34	4.31	3.14	3.24	3.48	4.03	1.93	4.31	0.31	4	2.79	3.28	1.17	4.21
2.35	4.23	2.71	3.48	3.55	3.61	1.61	4.23	0.68	4.13	2.77	3.87	1.45	4.26
2.91	3.47	3.37	2.71	3.28	3.19	2.31	3.94	0.97	3.87	3.35	3.6	1.22	3.48
3.34	2.98	4.03	2.44	3.05	2.7	2.48	3.77	1.13	3.67	3.42	3.34	1.44	3.17
3.67	3.59	4.05	2.58	3.61	3.42	2.68	3.98	1.27	4.21	3.74	3.86	1.12	3.44
3.47	3.41	3.89	2.56	3.15	3.02	2.44	4.02	1.14	4.18	4	3.92	1.08	3.3
3	3.19	3.34	2.28	2.84	3.19	2.15	3.72	1.58	3.69	3.31	3.34	1.27	3.07
2.39	4.05	2.89	3.5	3.2	3.45	1.88	4.11	0.76	3.64	2.68	3.06	1.36	4.05
2.12	4.34	2.76	3.91	3.55	3.43	1.64	4.18	0.81	3.97	2.72	3.61	1.34	4.42
2.99	3.6	3.49	2.88	3.23	3.21	2.21	3.96	1.11	3.89	3.31	3.53	1.27	3.58

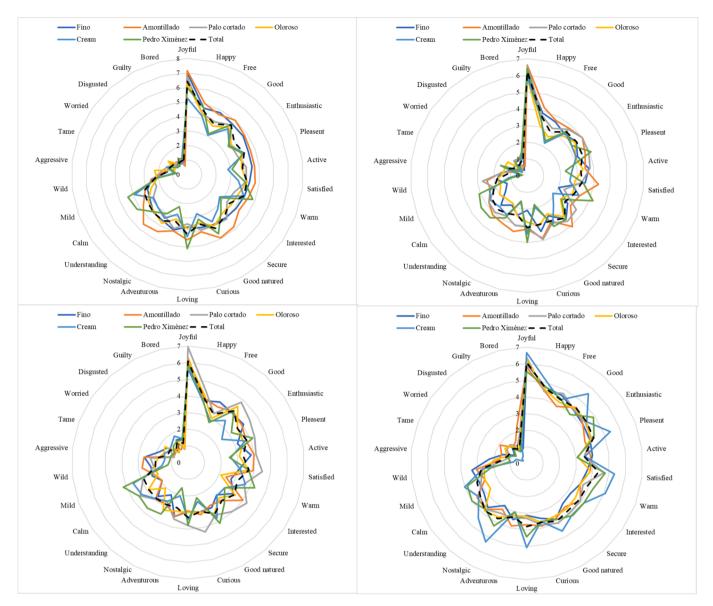


Fig. 1. 1A, 1B, 1C and 1D. Radial chart of emotional elicitation reported EC men (top-left) EC women (top-right), NEC men (bottom-left) and NEC women (bottom-right).

4. Emotional elicitation differences and explanatory model

The resulting GLM was shown to explain several items appropriately (Table 3). The explained effect of the categorical variables was significant for the wine factor. Post-hoc analysis multiple comparisons showed significant differences in different wine types on the items Free, Calm, Interested, Aggressive, Adventurous, Loving, Active, Mild, Wild, Worried and Curious (Table 4 and Fig. 2). The Group*Gender interaction effect also proved to significantly explain most of the emotional response items variance except for Happy, Disgusted, Guilty, Bored, Aggressive, Worried and Tame. Most of these items correspond to negative emotional elicitations generally unsuitable for wine, so it is possible that scores remained constant regardless of consumer and wine type. In the case of Happy, the same may have been confirmed as it is a too general a term to capture differences in products that generally produce a positive consumer response.

4.1. Clustering the emotional response items and relationship with emotional Intelligence

According to King and Meiselman (2010), all the emotional response items from the EsSense25 correspond, according to their nature, as positive, unclear or negative. The PCA was used to assess the distribution of emotional response items in our study. The results showed a better fit to two dimensions using the quatrimax rotation method that prioritises the minimum number of factors with the highest explanatory power (*KMO*=0.928; *Bartlett's Test of Sphericity* = 6539.784; p = 0.001). The first cluster corresponded to most of the positive items classified by King and Meiselman (2010) and explained the 38.66 % of the variance. The second cluster, which explained the 23.76 % of the variance, was composed of unclear and negative emotions (Fig. 3). The clusters were classified as positive emotions cluster (Cluster 1) and unclear and negative emotions cluster (Cluster 2) following recommendations from a previous study with two similar clusters (Mora et al., 2019). All terms had a component loading greater than 0.4 (Field, 2024; Guadagnoli & Velicer, 1988) in only one of the clusters, except for the term Wild which had a value of 0.54 in cluster 1 (positive emotions) and 0.474 in cluster 2

Table 3GLM on consumer emotional elicitation.

						Group (NEC vs EC)	Gender		Wine		Group*Ge	ender
	Type III Sum of Squares	df	Mean Square	F	p	F	p	F	p	F	p	F	p
Joyful	94.840	23	4.123	0.994	0.472	1.257	0.263	0.162	0.688	1.379	0.231	0.166	0.684
Free	224.271	23	9.751	2.439	0	3.508	0.062	0.047	0.828	3.815	0.002	25.210	0
Good	120.232	23	5.227	1.396	0.108	2.217	0.137	3.215	0.074	0.286	0.921	12.879	0
Enthusiastic	136.377	23	5.929	1.562	0.049	1.457	0.228	0.983	0.322	1.693	0.135	7.980	0.005
Good natured	128.146	23	5.572	1.511	0.063	0.214	0.644	2.863	0.091	1.037	0.396	16.983	0
Disgusted	37.652	23	1.637	0.545	0.959	2.110	0.147	0.012	0.913	0.282	0.923	0.722	0.396
Guilty	43.433	23	1.888	0.598	0.93	2.011	0.157	2.830	0.093	0.163	0.976	0.787	0.376
Calm	173.017	23	7.522	1.731	0.021	0.84	0.36	0.383	0.536	3.189	0.008	10.382	0.001
Нарру	94.436	23	4.106	1.056	0.394	1.529	0.217	0.364	0.547	0.3	0.913	15.805	0
Bored	58.365	23	2.538	0.818	0.709	3.669	0.056	1.111	0.293	0.297	0.914	1.064	0.303
Interested	172.774	23	7.512	1.876	0.009	6.066	0.014	0.612	0.435	2.513	0.03	8.905	0.003
Aggressive	148.393	23	6.452	1.742	0.019	5.572	0.019	4.035	0.045	4.910	0	0.169	0.681
Adventurous	203.939	23	8.867	2.422	0	0.778	0.378	0.944	0.332	6.831	0	13.632	0
Loving	191.329	23	8.319	1.927	0.007	0.068	0.794	1.404	0.237	4.248	0.001	12.609	0
Active	154.303	23	6.709	1.893	0.008	0.252	0.616	1.380	0.241	5.916	0	4.062	0.045
Mild	244.244	23	10.619	2.868	0	2.859	0.092	3.025	0.083	7.552	0	13.699	0
Understanding	158.258	23	6.881	2.087	0.003	1.676	0.196	0.105	0.746	1.833	0.106	22.894	0
Nostalgic	217.986	23	9.478	2.070	0.003	1.140	0.286	0.076	0.782	1.418	0.217	20.745	0
Wild	122.617	23	5.331	1.309	0.156	2.559	0.111	0.529	0.468	2.685	0.021	9.135	0.003
Pleasent	100.968	23	4.390	1.101	0.341	0.786	0.376	0.091	0.763	0.642	0.668	9.120	0.003
Worried	70.042	23	3.045	1.299	0.163	2.750	0.098	3.267	0.071	2.803	0.017	0.653	0.42
Satisfied	157.228	23	6.836	1.720	0.022	2.115	0.147	0.131	0.718	1.114	0.352	14.436	0
Curious	168.327	23	7.319	1.952	0.006	0.166	0.684	0.056	0.814	5.120	0	8.599	0.004
Secure	131.482	23	5.717	1.498	0.067	1.192	0.276	0.382	0.537	1.855	0.101	9.221	0.003
Tame	43.515	23	1.892	0.559	0.952	0.002	0.963	0.273	0.602	0.412	0.84	0.007	0.935
Warm	252.441	23	10.976	2.707	0	0.116	0.733	0.913	0.34	4.850	0	21.285	0

Note: No significant results were found for the Group*Wine, Gender*Wine and Group*Gender*Wine models, so they were not included in the table.

(unclear or negative emotions), therefore it was considered in the first

A positive significant Rho Spearman's correlation was found between EA and the mean scores of the clusters referring to positive and negative emotions (Table 5). However, no significant results were found with the other dimensions of the EI. Simple linear regression was used to test if EA significantly predicted the positive and negative emotions. The overall regression for positive emotions was statistically significant (R=0.249, F (1, 64) = 4.22, p = 0.04), but the regression model for negative emotions wasn't significant (p > 0.05) .

5. Discussion

The present study considered the criteria for consumer panel designs for applying emotional lexicons with the RATA methodology (Ng et al., 2013; Reinbach et al., 2014). Recommendations from literature for this type of study were also considered, suggesting between 60 and 80 participants (Ares et al., 2014), with 66 participants matched in gender, age, and experience about wine selected for the study. This type of study has proven effective in identifying factors that highlight differences in the emotional elicitation of wine consumers (Mora et al., 2018), even when they are not experts or have limited knowledge about it (Coste et al., 2018). These designs are not exclusive to studying wine consumption. For example, they have been used to study the influence of context on emotions evoked when consuming beer (Nijman et al., 2019) or the impact of personality traits on emotional experience in different food consumption contexts (Piqueras-Fiszman & Jaeger, 2014). Since early studies on consumer emotional experience, the relationship between emotional response and product satisfaction has been explored, and a significant relationship between them has been found (Liljander & Bergenwall, 1999; Westbrook & Oliver, 1991). However, these studies also have limitations, including variability in results due to the context in which the wine tasting takes place; consuming in artificial contexts, like laboratory conditions or virtual environments, as the present study, hampers the extrapolation of results to real consumption contexts (Jiang et al., 2017; Torrico et al., 2020).

Significant differences were found as a function of sex or level of experience (NEC vs. EC). This demonstrates the impact of demographic and cognitive variables on emotional elicitation in sherry wine consumption (Ferreira et al., 2019). Mora et al. (2019) also found different consumer segments based on personality traits. Participants scoring higher in neuroticism were more associated with negative emotions. In the other hand, participants scoring higher in extraversion, agreeableness, and consciousness were more related to positive emotions towards consumption. These results, combined with the findings of this study, can help to understand the relevance of consumer psychological characteristics in understanding the consumer experience. Other studies found that demographic variables like gender, age, and consumption frequency had more substantial effects on the emotional response to wines than education or income (Mora et al., 2018; Ristic et al., 2019). Therefore, it would be interesting to delve deeper into related variables for future studies.

Blind tasting is interesting for testing wine recognition and evaluating taste, aroma, and other intrinsic attributes (Hennion, 2015; Postman, 2010). However, eliminating most extrinsic attributes (brand, colour, packaging, price, awards, etc.) makes predicting purchase and consumption inefficiently, making comparing one wine to another difficult (Cohen, 2013; Kytö et al., 2018). In these tastings, attributes like price lose all importance for consumers as factors influencing satisfaction with consumption (Goldstein et al., 2008). Nevertheless, a blind tasting design was used for a less biased evaluation of the emotional evocation of consumption (Spinelli et al., 2015), focusing on the emotional response provoked by the organoleptic properties of sherry wines.

The resulting model, including gender, group (NEC vs. EC), and wine type, was significant for 14 of the 25 items comprising the EsSense25 instrument. As in previous studies, the interaction of gender had a more significant effect than the variable independently (Mora et al., 2018). The type of wine was the independent variable that showed more significant effects on the items. It agrees with studies that consider wine type one of the most important variables in consumer perception (Figueiredo-González et al., 2016). Although the NEC group did not show

Table 4
Multiple comparisons using Tuckey HSD correction post-hoc test (Wine type).

Dependent Variable	(I) Catas	(J) Catas	Mean Difference (I-J)	SE	p	95 % Confidence Interval		
-					-	Lower Bound	Upper Bound	
Free	Fino	Cream	1.22	0.351	0.007	0.22	2.23	
		Pedro Ximénez	1.13	0.349	0.016	0.13	2.14	
Calm	Fino	Pedro Ximénez	-1.35	0.364	0.003	-2.40	-0.31	
Interested	Amontillado	Cream	1.03	0.348	0.038	0.03	2.03	
Aggressive	Fino	Cream	1.01	0.338	0.034	0.05	1.98	
		Pedro Ximénez	1.15	0.336	0.009	0.18	2.11	
	Amontillado	Pedro Ximénez	1.07	0.334	0.018	0.12	2.03	
	Oloroso	Pedro Ximénez	1.07	0.332	0.017	0.12	2.03	
Adventurous	Fino	Pedro Ximénez	1.22	0.334	0.004	0.27	2.18	
Auventurous	Amontillado	Cream	1.27	0.333	0.002	0.32	2.23	
		Pedro Ximénez	1.55	0.332	< 0.001	0.60	2.50	
	Palo cortado	Cream	1.08	0.333	0.017	0.12	2.03	
		Pedro Ximénez	1.35	0.332	< 0.001	0.40	2.30	
Loving	Fino	Cream	-1.06	0.364	0.044	-2.11	-0.02	
Ü		Pedro Ximénez	-1.36	0.363	0.003	-2.40	-0.32	
	Oloroso	Pedro Ximénez	-1.15	0.359	0.018	-2.18	-0.12	
Active	Fino	Cream	1.14	0.330	0.008	0.19	2.08	
		Pedro Ximénez	1.27	0.329	0.002	0.33	2.21	
	Amontillado	Cream	1.15	0.328	0.007	0.21	2.09	
		Pedro Ximénez	1.28	0.327	0.001	0.35	2.22	
	Palo cortado	Cream	1.00	0.328	0.029	0.06	1.94	
		Pedro Ximénez	1.13	0.327	0.008	0.20	2.07	
Mild	Fino	Cream	-1.06	0.338	0.022	-2.03	-0.10	
		Pedro Ximénez	-1.47	0.336	< 0.001	-2.44	-0.51	
	Amontillado	Pedro Ximénez	-1.33	0.334	0.001	-2.29	-0.38	
	Palo cortado	Cream	-0.94	0.335	0.059	-1.90	0.02	
		Pedro Ximénez	-1.35	0.334	< 0.001	-2.31	-0.39	
	Oloroso	Cream	-1.22	0.334	0.004	-2.17	-0.26	
		Pedro Ximénez	-1.63	0.332	< 0.001	-2.58	-0.67	
Wild	Amontillado	Pedro Ximénez	1.04	0.350	0.037	0.04	2.04	
Worried	Oloroso	Cream	0.82	0.265	0.025	0.06	1.59	
		Pedro Ximénez	0.78	0.264	0.041	0.02	1.53	
	Cream	Oloroso	-0.82	0.265	0.025	-1.59	-0.06	
Curious	Palo cortado	Cream	1.32	0.337	0.002	0.35	2.28	
		Pedro Ximénez	1.28	0.336	0.002	0.32	2.25	
	Cream	Amontillado	-1.06	0.337	0.022	-2.03	-0.10	
		Palo cortado	-1.32	0.337	0.002	-2.28	-0.35	
	Pedro Ximénez	Amontillado	-1.03	0.336	0.029	-1.99	-0.06	
Warm	Fino	Pedro Ximénez	-1.25	0.352	0.006	-2.25	-0.24	
	Palo cortado	Pedro Ximénez	-1.11	0.349	0.019	-2.12	-0.11	
	Oloroso	Pedro Ximénez	-1.34	0.348	0.002	-2.34	-0.35	

Note: Based on observed means. Non-significant comparisons were removed from the table. The error term is Mean Square(Error) = 4.054.

significant differences for the items, the EC group did, emphasing the influence of expertise on emotional response to wine consumption (Bobowski et al., 2015). It suggests that future studies should consider the type of wine and the level of consumer education when studying emotional responses.

The PCA reported results similar to those found in most studies on EsSense25 items (Mora et al.; 2018). Although the original instrument refers to five dimensions (Nestrud et al., 2016), using a two-factor solution is an accepted strategy for comparing instrument results when considering two or more different types of products (King et al., 2010). The first dimension consisted of items referring to a positive emotional response to consumption (Free, Good, Enthusiastic, Joyful, Calm, Happy, Interested, Adventurous, Loving, Active, Warm, Understanding, Nostalgic, Pleasant, Satisfied, Curious, Secure, and Mild). The second dimension is related to ambiguous and negative emotions (Guilty, Disgusted, Bored, Aggressive, Worried, Tame, and Wild). Wine, due to its hedonic nature, might justify this differentiation: it generates deep emotional connections in consumers, resulting in intense emotional responses during its consumption, compared to other everyday beverages (Charters & Pettigrew, 2005; Niimi et al., 2019).

The relationship between emotional intelligence and clusters are much more difficult to interpret since there are no previous studies about this topic. Nevertheless, it does make sense that the ability to recognise one's own emotions (EA) correlates significantly with both clusters. That only positive emotions can be significantly predicted by

linear regression may be due to the fact that EA in pleasant task as wine tasting may narrow the attentional field on negative emotions (Zhang et al., 2016). Food and drink consumption is mainly related to positive emotions in most cases (Desmet & Schifferstein, 2008). The role of this variable in excessive consumption and alcohol addiction has been studied (González-Yubero et al., 2020). Training attention to regulate emotions, particularly selective attention to positive information (Wadlinger & Isaacowitz, 2011), could improve the elicitation of positive emotional while consuming and prevent binge drinking. However, other cognitive abilities such as the disinhibition in impulsivity may play an important role in this issue (Aluja et al., 2019).. The impact of other variables of Emotional Intelligence should not be discarded since it is possible that the sample was insufficient for the effect size of the tests, so it would be convenient to continue to study this relationship. It is also important to highlight that the study sample showed mean scores considered adequate for the three IE variables of the scale in both men and women (Salovey et al., 1995), so it would be interesting to study samples with higher or lower scores in the IE variables in future studies.

Overall, these findings align with the previous research highlighting the importance of emotions in understanding consumer behaviour. In particular, the study's findings emphasise the importance of wine type and consumer education as the main factors in understanding the emotional responses of wine consumers. Further research should delve into the intricate variables influencing emotional elicitation in sherry wine consumption, considering aspects such as personality traits,

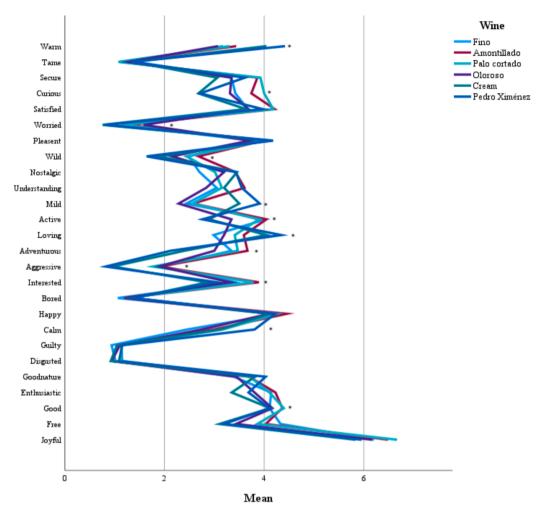


Fig. 2. Line chart of emotional elicitation reported by during the tasting. Note. Tuckey's HSD post-hoc correction test was used for the multiple comparisons *. p < 0.05.

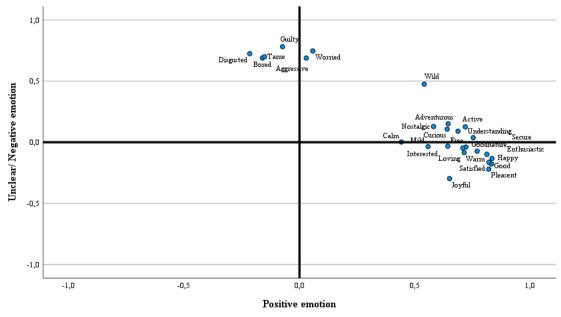


Fig. 3. Bidimensional plot on emotional elicitation PCA clustering. Note. First cluster (positive emotions) explained the 38.66% of the variance. Second cluster (negative and ambiguous emotions) explained the 23.76% of the variance.

Table 5Spearman's correlation between the positive and negative clusters and the TMMS-24 dimensions of Emotional Intelligence.

		Emotional Attention (EA)	Emotional Clarity (EC)	Emotional Repair (ER)
Positive	Rho Spearman	0.324**	0.172	0.059
Negative	p Rho Spearman	0.008 0.282*	0.167 -0.031	0.639 -0.202
	p	0.022	0.805	0.103

^{**.} p < 0.01; *. p < 0.05.

demographics, specific consumption contexts, as well as exploring the effect of consumers' emotional intelligence on their rating of consumption and whether it has any relationship with the frequency of hedonic consumption and other consumption-related variables.

6. Conclusions

Emotions play an important role in the wine consumption experience. This seems confirms emotional elicitation of wine consumption outline by the literature (Ferrarini et al., 2010). The PCA revealed two main dimensions: positive and ambiguous or negative emotional responses.

In addition to the significant differences in the evocation of emotions found as a function of gender and the consumer's experience (non-expert versus expert consumers), the interaction of both factors was also found to influence the emotional response significantly. Furthermore, the wine type variable by itself also proved to be a good predictor of the variation in the emotional response item scores, highlighting the importance of wine type and consumer education in understanding emotional elicitation. EA was the only dimension of Perceived Emotional Intelligence that showed a significant relationship with the means of the positive and negative emotions items. This may have important implications for understanding and promoting responsible wine consumption, but further research is needed.

Despite these findings, the study has several limitations. The artificial context where the blind tastings took place or the relevance of other psychological characteristics, such as personality traits, should be consider to understand the implications of this study. Further research would have to explore these variables and their influence on emotional elicitation. However, the results offer valuable insights for understanding wine consumption. Consumers' emotional responses may also facilitate better market segmentation and more effective marketing strategies in the future.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

References

- Ahn, H. (2022). Emotional Intelligence as a Personality Trait That Predicts Consumption Behavior: The Role of Consumer Emotional Intelligence in Persuasive Communication. Sustainability, 14(22), 15461. https://doi.org/10.3390/ su142215461
- Aluja, A., Lucas, I., Blanch, A., & Blanco, E. (2019). Personality and disinhibitory psychopathology in alcohol consumption: A study from the biological-factorial personality models of Eysenck, Gray and Zuckerman. Personality and Individual Differences. DOI: 10.1016/J.PAID.2019.01.030.

- Ares, G., Tárrega, A., Izquierdo, L., & Jaeger, S. R. (2014). Investigation of the number of consumers necessary to obtain stable sample and descriptor configurations from check-all-that-apply (CATA) questions. *Food Quality and Preference*, 31, 135–141. https://doi.org/10.1016/j.foodqual.2013.08.012
- Barker, S., Moss, R., & McSweeney, M. B. (2021). Carbonated emotions: Consumers' sensory perception and emotional response to carbonated and still fruit juices. Food Research International, 147, Article 110534. https://doi.org/10.1016/j. foodres.2021.110534
- Bono-Cabre, R. (2012). Diseños cuasi-experimentales y longitudinales. OMANDO: Universitat de Barcelona.
- Calvo-Porral, C., Ruiz-Vega, A., & Lévy-Mangin, J. (2018). The Influence of Consumer Involvement in Wine Consumption-Elicited Emotions. *Journal of International Food & Agribusiness Marketing*, 31, 128–149. https://doi.org/10.1080/ 08974438.2018.1482587
- Charters, S., & Pettigrew, S. (2005). Is wine consumption an aesthetic experience? Journal of Wine Research, 16(2), 121–136. https://doi.org/10.1080/ 09571260500327663
- Cicchetti, D. V. (2004). On designing experiments and analysing data to assess the reliability and accuracy of blind wine tastings. *Journal of Wine Research*, 15(3), 221–226
- Cohen, J. (2013). On the Limitations of Blind Tasting. World of Fine Wine, 41, 74–81. Consejo Regulador del Vino de Jerez (2023, November 7). Sherry Wine. https://www.sherry.wine/sherry-wine.
- Cooper, M. L., Russell, M., & George, W. H. (1988). Coping, expectancies, and alcohol abuse: A test of social learning formulations. *Journal of abnormal psychology*, 97(2), 219.
- Corner, S. (2009). Choosing the right type of rotation in PCA and EFA. *JALT testing & evaluation SIG newsletter*, 13(3), 20–25.
- Coste, A., Sousa, P., & Malfeito-Ferreira, M. (2018). Wine tasting based on emotional responses: An expedite approach to distinguish between warm and cool climate dry red wine styles. Food Research International, 106, 11–21. https://doi.org/10.1016/j. foodres.2017.12.039
- Criado, C., Muñoz-González, C., Mora, M., Fernández-Ruíz, V., Chaya, C., & Pozo-Bayón, M. A. (2022). Understanding If Differences in Salivary Flow Rate and Total Protein Content Triggered by Biological Factors (Sex and Age) Affect Aroma Perception and the Hedonic and Emotional Response of Wine Consumers. Foods, 11 (19), 3104. https://doi.org/10.3390/foods11193104
- Cruces-Montes, S. J., Merchán-Clavellino, A., Romero-Moreno, A., & Paramio, A. (2020).
 Perception of the attributes of sherry wine and its consumption in young people in the South of Spain. Foods, 9(4), 417. https://doi.org/10.3390/foods9040417
- Danner, L., Ristić, R., Johnson, T., Meiselman, H., Hoek, A., Jeffery, D., & Bastian, S. (2016). Context and wine quality effects on consumers' mood, emotions, liking and willingness to pay for Australian Shiraz wines. Food research international, 89(1), 254-265. https://doi.org/10.1016/i.foodres.2016.08.006
- Desmet, P. M., & Schifferstein, H. N. (2008). Sources of positive and negative emotions in food experience. *Appetite*, 50(2–3), 290–301. https://doi.org/10.1016/j. appet.2007.08.003
- Ekman, P. (1984). Expression and the nature of emotion. *Approaches to emotion, 3*(19),
- Ferrarini, R., Carbognin, C., Casarotti, E. M., Nicolis, E., Nencini, A., & Meneghini, A. M. (2010). The emotional response to wine consumption. Food Quality and Preference, 21(7), 720–725. https://doi.org/10.1016/j.foodqual.2010.06.004
- Ferreira, C., Lourenço-Gomes, L., Pinto, L., & Silva, A. (2019). Is there a gender effect on wine choice in Portugal? – A qualitative approach. *International Journal of Wine Business Research*, 31, 618–639. https://doi.org/10.1108/ijwbr-08-2018-0040
- Findley, M. G., Kikuta, K., & Denly, M. (2021). External Validity. Annual Review of Political Science forthcomin, 1, 51.
- Flanagan, B., Wariishi, N., Suzuki, T., & Hirokawa, S. (2015). August), Predicting and visualising wine characteristics through analysis of tasting notes from viewpoints, In International Conference on Human-Computer Interaction (pp. 613–619). Springer.
- Field, A. (2024). Discovering statistics using IBM SPSS statistics. Sage publications limited. Goldstein, R., Almenberg, J., Dreber, A., Emerson, J. W., Herschkowitsch, A., & Katz, J. (2008). Do more expensive wines taste better? Evidenc. https://doi.org/10.1017/S1931436100000523 e from a large sample of blind tastings. Journal of Wine
- Economics, 3(1), 1-9
 González-Yubero, S., Lázaro-Visa, S., & Palomera, R. (2020). ¿Qué Aporta la Inteligencia Emocional al Estudio de los Factores Personales Protectores del Consumo de Alcohol en la Adolescencia? *Psicología Educativa*, 27, 27–36. https://doi.org/10.5093/PSED2020A13
- González-Yubero, S., Palomera-Martín, R., & Lázaro-Visa, S. (2019). Trait and ability Emotional Intelligence as predictors of alcohol consumption in adolescents. *Psicothema*, 31(3), 292–297. https://doi.org/10.7334/psicothema2018.315
- Guadagnoli, E., & Velicer, W. F. (1988). Relation of sample size to the stability of component patterns. Psychological bulletin, 103(2), 265.
- Hennion, A. (2015). Paying attention: What is tasting wine about. Moments of valuation. Exploring sites of dissonance, (Part 1), 37-56.
- Holbrook, M. B., & O'Shaughnessy, J. (1984). The role of emotion in advertising. Psychology & Marketing, 1(2), 45–64. https://doi.org/10.1002/mar.4220010206
- Jiang, W., Niimi, J., Ristic, R., & Bastian, S. E. P. (2017). Effects of immersive context and wine flavor on consumer wine flavor perception and elicited emotions. American Journal of Enology and Viticulture, 68(1), 1–10. https://doi.org/10.5344/ ajev.2016.16056
- Jiang, Y., King, J. M., & Prinyawiwatkul, W. (2014). A review of measurement and relationships between food, eating behavior and emotion. *Trends in Food Science & Technology*, 36(1), 15–28. https://doi.org/10.1016/j.tifs.2013.12.005

- Kidwell, B., Hardesty, D. M., & Childers, T. L. (2008). Consumer emotional intelligence: Conceptualisation, measurement, and the prediction of consumer decision making. *Journal of Consumer Research*, 35(1), 154–166. https://doi.org/10.1086/524417
- Kim, J. Y., Prescott, J., & Kim, K. O. (2017). Emotional responses to sweet foods according to sweet liker status. Food Quality and Preference, 59, 1–7. https://doi.org/ 10.1016/j.foodqual.2017.01.013
- King, S. C., Meiselman, H. L., & Carr, B. T. (2010). Measuring emotions associated with foods in consumer testing. Food Quality and Preference, 21(8), 1114–1116. https:// doi.org/10.1016/j.foodqual.2010.08.004
- King, S. C., & Meiselman, H. L. (2010). Development of a method to measure consumer emotions associated with foods. Food quality and preference, 21(2), 168–177. https://doi.org/10.1016/j.foodqual.2009.02.005
- Kun, B., & Demetrovics, Z. (2010). Emotional intelligence and addictions: A systematic review. Substance use & misuse, 45(7–8), 1131–1160. https://doi.org/10.3109/ 10826080903567855
- Kytö, E., Järveläinen, A., & Mustonen, S. (2018). Hedonic and emotional responses after blind tasting are poor predictors of purchase behavior. Food Quality and Preference, 70, 49–56.
- Liljander, V., & Bergenwall, M. (1999). Consumption-based emotional responses related to satisfaction. Helsinki: Helsinfors: Swedish School of Economics and Business Administration.
- López-Guzmán, T., Vieira-Rodríguez, A., & Rodríguez-García, J. (2014). Profile and motivations of European tourists on the Sherry wine route of Spain. *Tourism Management Perspectives*, 11, 63–68. https://doi.org/10.1016/j.tmp.2014.04.003
- Maciejewski, M. L. (2020). Quasi-experimental design. *Biostatistics & Epidemiology, 4*(1), 38–47.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, 27(4), 267–298. https://doi. org/10.1016/S0160-2896(99)00016-1
- Mayer, J. D., & Salovey, P. (1993). The intelligence of emotional intelligence. *Intelligence*, *17*(4), 433–442. https://doi.org/10.1016/0160-2896(93)90010-3
- Mizerski, R. W., & White, J. D. (1986). Understanding and using emotions in advertising. Journal of Consumer Marketing, 3(4), 57–69. https://doi.org/10.1108/eb008180
- Mora, M., de Matos, A. D., Fernández-Ruiz, V., Briz, T., & Chaya, C. (2020). Comparison of methods to develop an emotional lexicon of wine: Conventional vs rapid-method approach. Food Quality and Preference, 83, Article 103920. https://doi.org/10.1016/ i.foodqual.2020.103920
- Mora, M., Urdaneta, E., & Chaya, C. (2018). Emotional response to wine: Sensory properties, age and gender as drivers of consumers' preferences. Food Quality and Preference, 66, 19–28. https://doi.org/10.1016/j.foodqual.2017.12.015
- Mora, M., Urdaneta, E., & Chaya, C. (2019). Effect of personality on the emotional response elicited by wines. Food Quality and Preference, 76, 39–46. https://doi.org/ 10.1016/j.foodqual.2019.03.015
- Nestrud, M. A., Meiselman, H. L., King, S. C., Lesher, L. L., & Cardello, A. V. (2016). Development of EsSense25, a shorter version of the EsSense Profile®. Food Quality and Preference, 48, 107–117. https://doi.org/10.1016/j.foodqual.2015.08.005
- Ng, M., Chaya, C., & Hort, J. (2013). Beyond liking: Comparing the measurement of emotional response using EsSense Profile and consumer defined check-all-that-apply methodologies. Food Quality and Preference, 28(1), 193–205. https://doi.org/ 10.1016/i.foodqual.2012.08.012
- Ng, M., & Hort, J. (2015). Insights into measuring emotional response in sensory and consumer research. In *Rapid sensory profiling techniques* (pp. 71–90). Woodhead Publishing
- Niimi, J., Danner, L., & Bastian, S. E. (2019). Wine leads us by our heart not our head: Emotions and the wine consumer. Current Opinion in Food Science, 27, 23–28. https://doi.org/10.1016/j.cofs.2019.04.008
- Pedroza, M. A., & Herrell, R. (2022). Exploring emotions as a new quality parameter in wine. *Wine Business Journal*, 5(1), 6–26. https://doi.org/10.26813/001c.31663
- Piqueras-Fiszman, B., & Jaeger, S. R. (2014). The impact of evoked consumption contexts and appropriateness on emotion responses. Food Quality and Preference, 32, 277–288. https://doi.org/10.1016/j.foodqual.2013.09.002
- Plutchik, R. (1991). The emotions. University Press of America.
- Porcherot, C., Delplanque, S., Raviot-Derrien, S., Le Calvé, B., Chrea, C., Gaudreau, N., & Cayeux, I. (2010). How do you feel when you smell this? Optimization of a verbal measurement of odor-elicited emotions. *Food Quality and Preference*, 21(8), 938–947. https://doi.org/10.1016/j.foodqual.2010.03.012
- Postman, J. (2010). Blind tasting. Journal of Wine Economics, 5(1), 184-187.
- Pozo-Bayón, M., & Moreno-Arribas, M. (2016). Sherry wines: Manufacture, composition and analysis.

- Reinbach, H. C., Giacalone, D., Ribeiro, L. M., Bredie, W. L., & Frøst, M. B. (2014). Comparison of three sensory profiling methods based on consumer perception: CATA, CATA with intensity and Napping®. Food Quality and Preference, 32, 160–166. https://doi.org/10.1016/j.foodqual.2013.02.004
- Richins, M. L. (1997). Measuring emotions in the consumption experience. *Journal of consumer research*, 24(2), 127–146.
- Ristic, R., Danner, L., Johnson, T. E., Meiselman, H. L., Hoek, A. C., Jiranek, V., & Bastian, S. E. P. (2019). Wine-related aromas for different seasons and occasions: Hedonic and emotional responses of wine consumers from Australia, UK and USA. Food Quality and Preference, 71, 250–260. https://doi.org/10.1016/j.foodqual.2018.07.011
- Sadachar, A., Rolling, V., & Manchiraju, S. (2017). Consumer Emotional Intelligence and its Role in the Apparel Consumption Behavior. *International Textile and Apparel Association Annual Conference Proceedings* (Vol. 74, No. 1).
- Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, cognition and personality*, 9(3), 185–211.
- Silva, A. P., Jager, G., Van Bommel, R., Van Zyl, H., Voss, H. P., Hogg, T., & De Graaf, C. (2016). Functional or emotional? How Dutch and Portuguese conceptualise beer, wine and non-alcoholic beer consumption. Food quality and preference, 49, 54–65. https://doi.org/10.1016/j.foodqual.2015.11.007
- Souza-Coutinho, M., Brasil, R., Souza, C., Sousa, P., & Malfeito-Ferreira, M. (2020). Consumers Associate High-Quality (Fine) Wines with Complexity, Persistence, and Unpleasant Emotional Responses. Foods, 9(4), 452. https://doi.org/10.3390/ foods040452
- Spinelli, S., Masi, C., Dinnella, C., Zoboli, G. P., & Monteleone, E. (2014). How does it make you feel? A new approach to measuring emotions in food product experience. Food Quality and Preference, 37, 109–122. https://doi.org/10.1016/j. foodqual.2013.11.009
- Spinelli, S., Masi, C., Zoboli, G. P., Prescott, J., & Monteleone, E. (2015). Emotional responses to branded and unbranded foods. Food Quality and Preference, 42, 1–11. https://doi.org/10.1016/j.foodqual.2014.12.009
- Statharakos, N., Alvares, A. J., Papadopoulou, E., & Statharakou, A. (2022). Psychology of Emotions. In *The Psychology of Anger* (pp. 21–50). Cham: Springer International Publishing
- Thomson, D. M., & Coates, T. (2021). Are unconscious emotions important in product assessment? How can we access them? Food Quality and Preference, 92, Article 104123. https://doi.org/10.1016/j.foodqual.2020.104123
- Torrico, D. D., Han, Y., Sharma, C., Fuentes, S., Gonzalez Viejo, C., & Dunshea, F. R. (2020). Effects of context and virtual reality environments on the wine tasting experience, acceptability, and emotional responses of consumers. *Foods*, 9(2), 191. https://doi.org/10.3390/foods9020191
- Van Ittersum, K., Candel, M. J., & Meulenberg, M. T. (2003). The influence of the image of a product's region of origin on product evaluation. *Journal of Business research*, 56 (3), 215–226. https://doi.org/10.1016/S0148-2963(01)00223-5
- Van Zyl, H., & Meiselman, H. L. (2016). An update on the roles of culture and language in designing emotion lists: English, Spanish and Portuguese. Food Quality and Preference, 51, 72–76. https://doi.org/10.1016/j.foodqual.2016.02.019
- Wadlinger, H., & Isaacowitz, D. (2011). Fixing Our Focus: Training Attention to Regulate Emotion. Personality and Social Psychology Review, 15, 102–175. https://doi.org/ 10.1177/1088868310365565
- Westbrook, R. A. (1987). Product/consumption-based affective responses and postpurchase processes. *Journal of marketing research*, 24(3), 258–270. https://doi.org/10.1177/002224378702400302
- Westbrook, R. A., & Oliver, R. L. (1991). The dimensionality of consumption emotion patterns and consumer satisfaction. *Journal of consumer research*, 18(1), 84–91. https://doi.org/10.1086/209243
- Worch, T., Sinesio, F., Moneta, E., Abbà, S., Dreyfuss, L., McEwan, J. A., & Porcherot-Lassallette, C. (2020). Influence of different test conditions on the emotional responses elicited by beers. Food Quality and Preference, 83, Article 103895. https:// doi.org/10.1016/j.foodqual.2020.103895
- Zhang, X., Japee, S., Safiullah, Z., Mlynaryk, N., & Ungerleider, L. G. (2016).
 A normalization framework for emotional attention. *PLoS biology*, 14(11), e1002578.
- Zikmund, W. G. (2003). Business research methods, mason, Ohio, south-western. X the restaurant behaviour of the Berlin people.