A GENDER APPROACH TO WINE INNOVATION AND ORGANIC WINE PREFERENCES

UMA ABORDAGEM DE GÊNERO PARA A INOVAÇÃO DO VINHO E AS PREFERÊNCIAS DO VINHO ORGÂNICO

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SUMMARY

The development of innovative products, such as novel wines, is rejected by certain consumers that value attributes that may conflict with innovation. This is the case of the organic production label. The present study examined the impact of gender on wine purchasing preferences for innovative and organic wines. The findings showed that price is the most important attribute for both men and women when buying wine. The results also revealed that women assign greater importance to the production system (organic/conventional) than men. The segmentation generated according to the level of wine neophobia revealed significant differences between men and women in the frequency of wine consumption and the socioeconomic variables considered (age, educational level and income). The level of wine neophobia was higher in women than in men, but, in both genders, it increased with age and decreased as income and educational level increased. Women’s lesser interest in innovative wines and their more positive attitude towards organic wines encourages the consideration of women as a segment in which tradition and naturalness related to wine should be specifically taking into account.

RESUMO

O desenvolvimento de produtos inovadores, designadamente novos vinhos, é rejeitado por alguns consumidores que valorizam atributos que podem entrar em conflito com a inovação. É o caso do selo de produção orgânica. O presente estudo avaliou o impacto do gênero nas preferências de compra de vinhos inovadores e orgânicos. Os resultados mostram que o preço é o atributo mais importante para homens e mulheres na compra de vinho. Os resultados também mostraram que as mulheres atribuem maior importância ao sistema de produção (orgânico/convencional) do que os homens. A divisão gerada de acordo com o nível de neofobia relativamente ao vinho revelou diferenças significativas entre homens e mulheres na frequência de consumo de vinho e nas variáveis socioeconómicas (idade, nível educacional e rendimento). O nível de neofobia relativamente ao vinho revelou-se mais elevado nas mulheres do que nos homens, mas, em ambos os gêneros, aumentou com a idade e diminuiu com o aumento do rendimento e do nível educacional. O menor interesse das mulheres por vinhos inovadores e a sua atitude mais positiva em relação aos vinhos orgânicos estimula a consideração das mulheres como um segmento em que a tradição e a naturalidade do vinho devem ser especificamente ponderadas.

Keywords: Consumer behavior, organic wine, wine neophobia scale (WNS), women, men.
Palavras-chave: Comportamento do consumidor, vinho orgânico, escala de neofobia ao vinho (WNS), mulheres, homens.

INTRODUCTION

Although the wine market has conventionally been linked to tradition, the increasingly competitive market (OIV, 2019) has encouraged companies to constantly improve their existing products or even develop radical innovations (Rabadán, 2021). These innovations range from the addition of new ingredients (Nguyen et al., 2019) to changes in the production process (Cebrián-Tarancón et al., 2019; Rabadán, 2021). Although it can no longer be considered a “new to the market” innovation (OECD, 2018), one of the most important and wide-spread innovations in the wine sector in recent years has been the production of organic wines (Rabadán and Bernabéu, 2021b). However, the limited acceptance of organic wine among consumers and the need to develop future

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innovations encourages the evaluation of innovation in traditional agri-food products considering consumers’ perceptions (Galanakis, 2019).

Wine is considered a traditional product; the quality of which greatly depends on the place and the production process (Pretorius, 2020). In addition, the real quality of wine can only be perceived once consumed (Ristic et al., 2016), and thus multiple emotional, social and cultural attributes typically come into play in the purchasing decision process (Lockshin and Corsi, 2012; Bernabéu et al., 2013; Niimi et al., 2019). Previous research showed that consumers’ preferences for wine purchasing are formed according to certain extrinsic attributes of the product, of which the most noteworthy are place of origin (De-Magistris et al., 2015), type of wine (Rossetto and Galletto, 2019), price (Mann et al., 2012; Remaud and Forbes, 2012), production system (Mauracher et al., 2019; Janssen et al., 2020), label design (Pelet et al., 2020) and prizes awarded (Ferreira et al., 2019).

Regarding the organic attribute, in the case of wine, several studies have shown that some consumer segments are clearly willing to pay higher price for more naturally produced wines (Galati et al., 2019; Migliore et al., 2020). Pomarici et al. (2016) found a segment of Italian consumers (32% of the sample) that was highly interested in environmentally friendly wines. In a cross-country survey conducted in Sweden, the UK, Ireland and the USA, Loose and Lockshin (2013) found a similar size segment of consumers interested in sustainable wines. In this regard, studies confirmed that consumers prefer organic over conventional wine (Bernabéu et al., 2008; Mann et al., 2012), and are also ready to pay more for these kinds of wine (Brugarolas et al., 2010). However, the Willingness To Pay (WTP) reported may be overestimated, given that an attitude-behaviour gap has been suggested (Schäufele and Hamm, 2017). Attitude-behaviour gap appears when consumers exhibit positive attitudes towards organic wines but fail to translate those attitudes into a higher WTP for these wines. Additionally, when the production system (organic/conventional) is compared with other attributes, the positive attitude towards the organic label is found to be marginal. The study of Mann et al. (2012) reported that Swiss consumers value the organic attribute more than the colour of wine, but less than the price and the origin. Similar results were obtained by Remaud et al., (2008), who found that the average Australian consumer cares little about the organic attribute when purchasing wine. Although consumers generally consider organic products to be healthier (Bonn et al., 2016) and having improved sensory characteristics (Wiedmann et al., 2014) the demand for organic wine is still below 10% compared to total wine sales in all countries (Schäufele and Hamm, 2018), and the organic label remains one of the least valued attributes when purchasing wine.

One of the main advantages of organic products is that they are perceived as more natural (Yormirzoev et al., 2021). The concept of “more natural wine” is not easily defined, but can, in some cases, conflict with wine innovation, as even slight modifications in the production process can make wines be perceived as more artificial products (Saltman et al., 2017; Nguyen et al., 2019; Nguyen et al., 2020). For this reason, higher level of rejection of innovative wines is expected from consumers that show more positive attitudes towards organic wine production (Rabadán and Bernabéu, 2021).

It is now generally accepted that new product development should focus on the consumer (Grunert et al., 2008). Thus, developing new or improved wines should draw on the analysis of consumer preferences, a process of which consumers must necessarily form part (Grunert et al., 2010). The starting premise will always be the consumers’ level of acceptance of such proposed innovations. Consumers’ reluctance to try or to enjoy the consumption of new food products has been labelled food neophobia. This concept has been the topic of extensive research, leading to the development of several instruments to measure the phenomenon. The most widely accepted of the proposed measures is the Food Neophobia Scale (FNS) (Pliner and Hobden, 1992; Damsbo-Svendsen et al., 2017). Following the success of the FNS, Ristic et al. (2016) developed a version specifically adapted to the analysis of consumers’ neophobia towards new wines: the Wine Neophobia Scale (WNS). This scale is useful to evaluate consumers attitudes towards unknown wines, but it could also be used to evaluate consumer attitudes towards wines that are novel or innovative and, therefore, unknown to consumers. This scale has been validated in wine consumers in Australia (Ristic et al., 2016) and Italy (Castellini and Samoggia, 2018), among others, and has emerged as the primary tool to analyse consumers’ willingness to consume new wines.

The analysis of consumer profiles in relation to their food neophobia scores is an area that has generated the greatest interest (Rabadán and Bernabéu, 2021b). Ristic et al. (2016) and Meiselman et al. (2010) showed that wine neophobia increased with age, while decreasing with increasing education. Nguyen et al. (2019), however, found no association between these socioeconomic variables and wine neophobia. One of the fields in which most studies have been conducted, but where no compelling conclusions have been reached, is the relationship between food neophobia and gender (Rabadán and Bernabéu, 2021b). The study by Nordin et al. (2004), points towards food aversions being more frequent in women, while other studies conclude that men are more food neophobic than women (Hursti and Sjödén, 1997; Tuorila et al., 2001; Tonon et al., 2019). A third group of studies report no significant gender-related differences in neophobia (Fernández-Ruiz et al., 2013; Nguyen et al., 2019).
Several studies have also assessed the influence of gender in sustainable agriculture practices (Trauger, 2004) as well as in food consumption (Little et al., 2009). In this regard, Morrison et al. (2011) found that women consume 50% less food than men. However, they consume 30% more fruit and vegetables. The positive effect of environmental awareness and health awareness on the purchase of organic foods (Olivas and Bernabéu, 2012; Kesse-Guyot et al., 2013; Irianto, 2015) explains why consumers of organic foods have typically been identified as women (Pearson et al., 2010). Similar results have been reported by studies evaluating the impact of gender on attitudes towards more sustainable wines (Pomarici et al., 2016; Sellers, 2016). Although direct recommendations have been made in the literature for producers to use gender as a crucial variable in the promotion of organic foods (Irianto, 2015), this strategy has not been widely used for the wine industry. In the study of Lockie et al. (2002), the authors explain that positive attitudes towards organic foods are not considered due to an increasing preference for convenience. This might explain why such positive attitudes towards organic foods, and also organic wines (Bernabéu et al., 2008; Mann et al., 2012), have not been transformed into real demand for these products (Schäufele and Hamm, 2018).

In this sense, the objective of this study was to advance in the study of the relationships between food neophobia, attitudes towards organic foods and the formation of consumer preferences in men and women. A conjoint analysis of these variables was conducted to determine the possibility of finding an effective segmentation to develop strategic actions aimed at the groups exhibiting greater acceptance of wine innovations and organic wine.

**MATERIALS AND METHODS**

The data used for this study were collected through face-to-face interviews with wine consumers conducted in the cities of Madrid, Leganés and Toledo (Spain). A total of 400 consumers were surveyed during September 2019. The maximum sampling error was 5.0%, for a confidence level of 95.5% (k=2), under the principle of maximum indetermination (p=q=50%). Before the fieldwork, a preliminary questionnaire was administered to 30 wine consumers to confirm that the survey questions were easily understandable. The survey was developed by a market research company ensuring that the distribution of age and education in the sample had a similar distribution with that observed in the Spanish population. Table I shows the socioeconomic characteristics of the sample.

<table>
<thead>
<tr>
<th>Variables</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>57.3</td>
</tr>
<tr>
<td>Women</td>
<td>42.7</td>
</tr>
<tr>
<td>Age (in years)</td>
<td></td>
</tr>
<tr>
<td>18–24</td>
<td>14.0</td>
</tr>
<tr>
<td>25–34</td>
<td>21.0</td>
</tr>
<tr>
<td>35–49</td>
<td>20.0</td>
</tr>
<tr>
<td>50–64</td>
<td>25.0</td>
</tr>
<tr>
<td>&gt;65</td>
<td>20.0</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>28.5</td>
</tr>
<tr>
<td>Secondary</td>
<td>39.5</td>
</tr>
<tr>
<td>University</td>
<td>30.5</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>1.5</td>
</tr>
<tr>
<td>Net monthly family income</td>
<td></td>
</tr>
<tr>
<td>&lt;900€</td>
<td>2.5</td>
</tr>
<tr>
<td>900–1,500€</td>
<td>15.0</td>
</tr>
<tr>
<td>1,501–2,100€</td>
<td>22.7</td>
</tr>
<tr>
<td>2,101–3,000€</td>
<td>35.7</td>
</tr>
<tr>
<td>&gt;3,000€</td>
<td>24.1</td>
</tr>
</tbody>
</table>

Following initial data analysis, it was decided to analyse men’s and women’s preferences and neophobias related to wine consumption by direct segmentation of the sample and subsequent multivariate statistical analysis using the conjoint analysis (CA) technique (Green and Rao, 1971) and the WNS (Ristic et al., 2016).

The CA technique was used to determine the wine consumers’ preference structure in order to identify, explore and quantify their attitudes and thus detect their wine consumption preferences. Using the WNS, the level of aversion to trying new wines was analysed (Ristic et al., 2016; Castellini and Samoggia, 2018) with the aim to identify the consumer segments more reluctant to buy new wines and the segments eager for innovation, which the range of new or innovative wines should target.

For the CA, the attributes and levels were selected drawing on previous articles on wine consumption (Skuras and Vakrou, 2002; Lockshin et al., 2006; Mann et al., 2012; Bernabéu et al., 2013; Bernabéu et al., 2016), consultation with 20 experts from...
several fields (business, politics and research) and through a previous questionnaire. The most representative attributes and levels in the consumer purchasing process of red wine were selected. The selected attributes were price (5, 10, 15 €/0.75 L bottle), type of red wine (young, oak-aged, origin (Rioja, La Mancha), production system (conventional, organic) and Protected Designation of Origin (PDO) label (yes, no). By including the reported attributes, the goal was to identify the effect of gender on the importance ascribed to wine attributes, and also, to determine the importance of the production system in comparison with those attributes that have traditionally been reported as the most relevant ones when purchasing wine.

Combining these five attributes and their 11 levels, 48 different profiles would have been obtained. This number of profiles is considered too high to be presented to consumers. Therefore, an orthogonal design was used to reduce the number of combinations to only eight (Breton-Clark, 1986). This lower number of profiles is considered to yield more effective evaluation, preventing routine responses and fatigue (Kirk, 1982; Bernabéu et al., 2018).

Once the hypothetical wines had been created (Table II), a set of cards to present to consumers for assessment was designed. To evaluate the purchasing decisions for the hypothetical wines a scale from one to ten points, with one being the minimum value (the lowest rated wine) and ten the maximum one (the highest rated wine), was used. These scores were then used to determine the influence of each attribute and level on the consumers’ preferences when purchasing wine.

For each of the groups of wine consumers (men and women), the regression in Equation 1 was used.

\[
y_i = \beta_0 + \beta_1 \times PRI + \beta_2 \times TYPE + \beta_3 \times ORIG + \beta_4 \times ORG + \beta_5 \times CER + \epsilon
\]

\(\beta_i = \) regression coefficients; PRI = price; TYPE = dummy for young wine; ORIG = dummy for the La Mancha origin; ORG = dummy for organic wine; CER = dummy variable for the Protected Designation of Origin; \(\epsilon = \) term of error.

### Table II

<table>
<thead>
<tr>
<th>Wine</th>
<th>Price (€/0.75 L)</th>
<th>Type</th>
<th>Origin</th>
<th>Production system</th>
<th>PDO Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>Oak-aged</td>
<td>Rioja</td>
<td>Conventional</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>Young</td>
<td>La Mancha</td>
<td>Conventional</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>Oak-aged</td>
<td>Rioja</td>
<td>Organic</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>Oak-aged</td>
<td>La Mancha</td>
<td>Organic</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>Oak-aged</td>
<td>La Mancha</td>
<td>Conventional</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>Young</td>
<td>Rioja</td>
<td>Conventional</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>Young</td>
<td>La Mancha</td>
<td>Organic</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>15</td>
<td>Young</td>
<td>Rioja</td>
<td>Organic</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: own preparation.

Results were obtained by using the categories module from the SPSS statistical package for Windows (version 23.0), adapted to the decomposition model. The conjoint program permits estimation of the marginal utilities for each attribute, the total utility of each profile and the relative importance of each profile attribute.

To assess wine consumers’ neophobia, defined as the fear or irrational aversion to different, new wines, the WNS, based on the FNS (Pliner and Hobden, 1992), and designed by Ristic et al. (2016) was used. The WNS comprised eight items to which respondents reply according to their level of agreement/disagreement with the statements, scoring accordingly on a 9-point Likert-type scale, in which 1 (one) is total disagreement and 9 (nine) is total agreement. The use of the WNS to evaluate consumer attitudes towards innovative wines is based on the idea that a consumer open to trying unknown wines may well be keen to try innovative wines. Conversely, the more traditional the wine consumer is, the more reluctant they will be to try unknown, innovative wines.

The items analysed were: (1) I like going to places serving wines from different countries; (2) I will drink almost any wine; (3) I am afraid to drink wines I have never had before; (4) At social gatherings, I will try a new wine; (5) I like wines from different countries; (6) If I do not know what wine it is, I won’t try it; (7) I do not trust new wines; (8) I am constantly trying new and different wines. These statements are considered as either direct or reversed according to the attitudes reported by consumers on the WNS. Items 1, 2, 4, 5 and 8 were identified as reversed to neophobic attitudes in wine consumption, with the scores being inversely transformed in the calculation of the final score on the WNS.

To identify the wine neophobic consumer segments (greater aversion to trying new wines) and the wine neophilic consumer segments (greater willingness to
try new wines), the mean values in the WNS score were used (Lockshin and Corsi, 2012; Bernabéu et al., 2013; Niimi et al., 2019). Consumers above the mean were considered neophobic and those below were identified as neophilic. In addition, these neophobic and neophilic consumer groups were subdivided into two groups according to gender. The statistical analyses were conducted using the SPSS statistical package. The existence of significant differences for a maximum error or 1%, 5% and 10% have been identified (Ureña et al., 2008).

RESULTS AND DISCUSSION

Determination of men’s and women’s wine preferences

Using the parameters estimated according to the consumers’ willingness to purchase wine, the utilities associated with each level of each attribute were calculated (Table III).

The relative importance (RI) of each attribute was calculated as the proportion of the utility value for each attribute relative to the total utility of all the attributes (Halbrendt et al., 1991), using Equation 2.

\[ RI = \frac{\max U_i - \min U_i}{\sum (\max U_i - \min U_i)} \times 100 \]  

Eq. 2

Thereby, the attributes to which men and women assigned the least and most importance when purchasing wine could be identified (Figure 1).

The results showed that, for both men and women, price was the attribute with the greatest effect on their wine purchasing decisions. They coincide with the findings of the study conducted by Mann et al. (2012) on Swiss wine consumers. However, findings revealed differences between the preferences expressed by men and women regarding the other attributes under study. For men, the price was followed in order of importance by type of wine, DOP, origin, and production system. For women, it was followed by DOP, type of wine, origin, and production system. The PDO was, then, more important for men and women than the organic label when purchasing wine. This could be the result of a clear identification of the PDO with the origin (Sepúlveda et al., 2010), which is one of the main attributes than consumers consider when purchasing wine (Mann et al., 2012; Yang and Paladino, 2015; Schäufele and Hamm, 2018).

As regards the differences between genders, one of the main differences was the greater importance women ascribe to organically produced wines. This result was in line with the findings of various studies reporting that women are more sensitive to the purchase of organic products (Ureña et al., 2008; Olivas and Bernabéu, 2012; Rodríguez-Bermúdez et al., 2020). Previous research has reported that women’s more positive evaluation of organic foods could be the result of greater environmental awareness and interest in health (Pearson et al., 2010; Olivas and Bernabeu, 2012; Kesse-Guyot et al., 2013; Irianto, 2015). However, in the specific case of wine, Di Vita et al. (2019) showed men are more willing to pay a higher price for organic wines. Hence, it seems that despite women’s greater sensitivity towards organically produced wines (Mann et al., 2012), they might be unwilling to pay a higher price for the product.

Table III

Estimated utility of the attribute levels

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level</th>
<th>Consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Men (57.3%)</td>
</tr>
<tr>
<td>Price</td>
<td>5 €/0.75 L</td>
<td>1.093</td>
</tr>
<tr>
<td></td>
<td>10 €/0.75 L*</td>
<td>0.047</td>
</tr>
<tr>
<td></td>
<td>15 €/0.75 L</td>
<td>-1.140</td>
</tr>
<tr>
<td>Type</td>
<td>Young</td>
<td>-0.257</td>
</tr>
<tr>
<td></td>
<td>Oak-aged</td>
<td>0.257</td>
</tr>
<tr>
<td>Origin</td>
<td>La Mancha</td>
<td>-0.163</td>
</tr>
<tr>
<td></td>
<td>Rasa</td>
<td>0.163</td>
</tr>
<tr>
<td>Production system*</td>
<td>Conventional</td>
<td>-0.016</td>
</tr>
<tr>
<td>PDO Certification</td>
<td>Yes</td>
<td>0.190</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-0.190</td>
</tr>
</tbody>
</table>

1 Size of segment.
2 Indicates significant differences with a maximum error of 10%.
They might, however, be prepared to choose organic wine if the price were similar to that of conventionally produced wine. The results suggest that organic wines should be directed towards women as men show no interest in this label.

The men seemed to show greater interest in the type of wine and production under PDO. A previous study conducted in Portugal showed that men pay greater attention to the bottle back label, which includes less general information, such as grape variety and PDO, while women were more influenced by the front label information, such as region of origin and awards (Ferreira et al., 2019). Findings also corroborate those of studies on wine in New Zealand, Australia, UK and USA, which reported that women attached greater importance to price when purchasing wine (Remaud and Forbes, 2012).

Figure 2 shows the wines presented and the consumers’ preferences in this regard. The highest scoring wines were wines 1, 3, 4, 6 and 7, and the lowest scoring wines 2, 5 and 8. The scores awarded by men were generally higher than those of women. The three highest rated wines were the cheapest. The highest scoring wine was Wine 1, an oak-aged Rioja wine, conventionally produced and without POD, followed by Wine 6, a young Rioja, conventionally produced but with POD, and then Wine 7, a young La Mancha wine, organically produced and with POD. Consumers’ ratings for Wines 6 and 7 were very close, with organic production apparently marking the difference.

Significant differences in the assessments made by women compared to those of men were found for Wine 2 (p<0.05), Wine 3 (p<0.10) and Wine 5 (p<0.10), suggesting that women are less willing to pay a higher price for wine compared to men, and when they do so, they choose an oak-aged wine rather than a young one.
Determination of wine neophobia in men and women and their socioeconomic characteristics

Table IV shows the men’s and women’s scores on the WNS. Firstly, it is worth noting that Spanish wine consumers showed a higher level of wine neophobia compared to those from Australia (Ristic et al., 2016) but a lower level than consumers in Italy (Castellini and Samoggia, 2018). Results showed higher wine neophobia scores in women than in men, arguably because women are less interested in wine, focusing their attention on more traditional and easily recognisable variables (Johnson and Bastian, 2007; Remaud and Forbes, 2012; De-Magistris et al., 2015). However, lower interest in innovative wines in women may also be the result of women’s preference for more natural or environmentally friendly products (Irianto, 2015). The concept of novel or innovative wine could conflict with the perception of wine as a traditional or natural product (Rabadán and Bernabéu, 2021a). Considering the general scores obtained in the WNS, innovative wines should preferably be directed towards men as their scores are, on average, two points lower than those obtained among women.

Table IV

<table>
<thead>
<tr>
<th>Item</th>
<th>Variables</th>
<th>Consumers</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Men</td>
<td>Women</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>I like going to places serving wines from different countries* (R)</td>
<td>4.5</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I will drink almost any wine (R)</td>
<td>5.4</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I am afraid to drink wines I have never had before</td>
<td>2.8</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>At social gatherings, I will try a new wine (R)</td>
<td>3.4</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I like wines from different countries (R)</td>
<td>4.7</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>If I do not know what wine it is, I won’t try it*</td>
<td>2.4</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I do not trust new wines</td>
<td>2.8</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I am constantly trying new and different wines** (R)</td>
<td>5.6</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>** Mean WNS score**</td>
<td>31.6</td>
<td>33.8</td>
<td></td>
</tr>
</tbody>
</table>

(R) Indicates negatively worded items for which scores were reversed for calculation of the WNS score. ** and * indicate significant differences with a maximum error of 5% and 10%, respectively.

Source: Own preparation, drawing on Ristic et al. (2016).

Findings coincide with those reported in the study by Nordin et al. (2004), which concluded that women presented higher levels of wine neophobia. However, a posterior work by Nguyen et al. (2019), specifically focused on wine neophobia in Chinese, Vietnamese and Australian consumers, reported no
significant gender-related differences. The heterogeneity in the origin of the consumers studied may be the reason of the different conclusions obtained in these studies. Thus, further studies are needed to determine whether the impact of gender on wine neophobia is associated with consumers’ country of origin.

The results shown in Table 4 suggested that men are more willing than women to go to places where they can consume wine produced in different countries (p<0.10), to consume unfamiliar wines (p<0.10) and to constantly try new and different wines (p<0.05). There were significant differences between men and women on the WNS, with their scores being 31.6 and 33.8, respectively, suggesting that women are generally more reluctant to try new wines.

Table V shows the consumer segmentation according to level of wine neophobia and gender. The proposed segmentation seemed of great interest to identify different consumer groups as there were significant differences in frequency of wine consumption and in all the socioeconomic characteristics. The number of men in the neophilic and neo-phobic segments was similar, while in the case of the women, the majorities were included in the neophobic segment. Previous studies conducted in other countries have reported that women were typically more averse to trying new foods (Nordin et al., 2004), although in other works these differences were not statistically significant (Fernández-Ruiz et al., 2013).

The frequency of consumption was higher in men than in women, with differences in frequency according to neophobia level. The consumers with the highest frequency of consumption were neophilic men, and neophobic women were those with a significantly lower level of consumption. This result was expected, as greater exposure to a product usually results in lower neophobia towards that specific product (Rabadán and Bernabéu, 2021a). Exposure to a varied diet also reduces the general level of food neophobia (Rigal et al., 2006). This conclusion may not be consistent across ages as it was reported that Italian neophobic Millennials were those who less frequently consumed wine (Castellini and Samoggia, 2018).

Another study conducted in Spain by Rodríguez-Donate et al. (2017) found that women drank less wine than men, but it also showed that the segment of women wine consumers was highly heterogeneous (Rodríguez-Donate et al., 2019). Thus, the differences in findings between neophobic and neophilic female consumers may clearly be accounted for by the marked heterogeneity of women.

Regarding the other socioeconomic variables, it was observed that neophilic wine consumers generally had higher educational level than their neophobic counterparts, which is especially evident in the case of women. The results for women also revealed more
clearly that older consumers with a lower level of education are more likely to score higher on wine neophobia (Meiselman et al., 2010; Ristic et al., 2016; Nguyen et al., 2019; Rabadán and Bernabéu, 2021a). As previously reported by Meiselman et al. (2010) and Ristic et al. (2016), a higher educational level is associated with lower levels of neophobia, with neophilic female consumers being those with the highest levels of education (42.4% have university studies).

Regarding income, the clearest differences were found, regardless of gender, between neophilic and neophobic consumers. In the case of neophilic consumers, the net monthly family income of 31.5% of the men and 34.9% of the women is above 3,000 €. Neophobic consumers have traditionally been identified as older individuals, with a lower level of education and income (Meiselman et al., 2010; Ristic et al., 2016; Rabadán and Bernabéu, 2021b). In the specific case of wine, the most neophobic consumers also seemed to be less informed about wines, likely due to their lower frequency of consumption, especially in the case of neophobic women.

CONCLUSIONS

This work showed that, regardless of gender, price is the primary attribute considered when consumers buy wine. In order of importance, price was followed, at a considerable distance, by type of wine, PDO, origin and lastly whether it has been organically produced. Given the difference in the evaluation between price and the other attributes, can it be stated that price determines and limits the purchase of wine.

The production system remains the lowest value attribute for both genders. However, women assigned greater importance than men to the organic label. This result, together with the higher wine neophobia reported for women, suggested that women are more interested in traditional wines and those produced using more natural ingredients and processes. This limits women’s acceptance of novel wines, but also opens a window of opportunity for the development of more traditional and natural wines aimed at this segment. The development of this more natural and organic certified wines aimed at women appears to be a business opportunity. For wine consumers in general, the preferred red wine was inexpensive, oak-aged, with a PDO label, from Rioja and organically produced. Nonetheless, differences between men and women were found. The latter were less willing to pay higher price for wine, and if they had to pay such a price, they chose an oak-aged wine rather than a young one, and, if possible, one that has been organically produced.

Men were generally less neophobic than women, although a small segment of non-neophobic female wine consumers were willing to consume new, innovative wines. In addition, men drink wine more frequently than women, especially those who are less neophobic. This work suggests that the segment of neophilic men would be the most interesting segment for the marketing of new wines. With this information in mind, innovative wines should be developed specifically for this segment of non-neophobic men consumers.

In general, wine neophobia was found to increase with age and decrease as educational level and family income increase. Accordingly, when launching new or innovative wines, results suggest that wineries should target men consumers with higher levels of education and purchasing power.

There are two main limitations to this work. First, the surveys were only administered in three locations, while the results have been extrapolated to the country as a whole. However, by including three locations with different profiles, the effect of this restriction on the results is limited. Second, market research always has the weakness that there may be a difference between what consumer respondents say and what they actually do.

A future line of research would be to evaluate consumer attitudes towards specific types of technological and non-technological innovations, and to compare the importance ascribed to these factors with that reported for traditional attributes such as origin or price.

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