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The structure of consumer decision-making and sensory innovations in wine labeling

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Abstract

Aim of study: To understand how a consumer's decision-making process on wine choice varies when faced with labels introducing either a scratch-and-sniff strip or a Thermo-sensitive indicator as a novelty.

Area of study: Navarre (Spain).

Material and methods: This study applies the laddering survey method based on means-end chain theory to link product attributes to consumption benefits and values pursued.

Main results: In the context of these sensory innovations in labeling, the brand name of a product ceases to be of importance in this sector, with the new label becoming the relevant issue, associated with quality and aspects related to social wine consumption. In addition to this, these innovations make the decision-making process more complex by including more aspects of consumers' personalities.

Research highlights: For innovative labeling introducing sensory cues, the complexity of consumers' selection process increases, the wine brand loses importance and the label design gains importance as a signal of quality. Labeling innovations could be a great opportunity for wine companies with low marketplace positioning to improve their position and obtain better results in a highly competitive market.

Additional key words: wine marketing; sensory marketing; private labels; judgment and decision making; values; means-end chain

Abbreviations used: APT (association pattern technique); DO (Designation of Origin); HVM (hierarchical value map); MEC (means-end chain theory); LOV (list of values); SMEs (small and medium-sized enterprises).

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Introduction

Food and beverage packaging plays an important role when it comes to consumer choice in retail environments given that it constitutes the first product-consumer contact in a context in which the latter rarely has the opportunity to taste products in store and often needs to make their judgment based on packaging and brand (Rundh, 2016). A variety of parameters are involved in packaging design (*e.g.* color, shape and weight) to stimulate consumers' choices in retail stores (Simmonds & Spence, 2017). However, labels are one of the most significant packaging's characteristics in terms of providing consumers with product information and catching their attention, being one of the most accessible marketing strategies for food companies (Spence, 2016). Consequently, food companies seek to attract consumers' attention by offering more information and using innovative labeling to differentiate their products (Fenko *et al.*, 2016).

Label innovations in the wine sector have so far largely focused on the visual codes which typify certain product categories (Celhay *et al.*, 2017, 2020). These visual codes refer to the graphic characteristics such as color, materials, typography, design, and illustrations (Celhay & Trinquecoste, 2015). Innovations in terms of the shape and colour of wine bottles and labels can be risky as wine consumers tend to strongly associate bottles with wine type, origin and quality (Chamorro *et al.*, 2020). For example, many

instances of product failure were observed in the French wine market when brands attempted to break visual codes (Celhay & Trinquecoste, 2008). In Bordeaux, France, wine consumers prefer labels with some degree of graphic innovation only under certain conditions and with certain personal characteristics (Celhay & Trinquecoste, 2015). According to Lunardo & Rickard (2020), when consumers are faced with wine labels that incorporate a high level of fun elements, they perceive the label as riskier, resulting in a decrease in perceived quality and consequently a lower willingness to pay and buy the product. The preference for traditional over non-standard label design depends on the type of innovation proposed to consumers (Mugge & Dahl, 2013).

In this regard, recent research has highlighted the sensory aspects of packaging and label design (*e.g.* form, shape, color, texture and smell) as relevant variables in customer experience and how changing these attributes influence their judgments and decisions (Krishna *et al.*, 2017). From a business point of view, this appeal to consumers' senses in labeling can lead to self-service products with high heterogeneity like wine to stand out in retail stores (Lick *et al.*, 2017). For example, Krishna *et al.* (2014) showed that printed food images including aroma, increased physiological responses (salivation) and consumption. Thus, some companies are now impregnating packaging adhesives so that when consumers open a container they smell an aroma related to the food or beverage inside (Bouckley, 2013). Furthermore, there is a growing interest in functional packaging in which one element (label) or the whole pack changes color when the contents are in poor condition (Spence, 2016) or in an optimum state for consumption, which affects consumers' sensory engagement with the product. Nevertheless, as we stated, much of the research on wine packaging innovation has focused on label design, particularly the information contained such as origin, quality cues, color and layout, thus obviating innovations in terms of other sensory cues like aroma and temperature of consumption (Puyares *et al.*, 2010; Jaud & Melnyk, 2020). There are, therefore, few studies addressing wine consumers' behavior and their choice decisions in terms of innovative labeling introducing olfactory characteristics and Thermo-sensitive functionalities (Celhay *et al.*, 2020).

The success of these sensory innovations requires understanding consumers' motives to select them. That is, addressing their perceptions concerning the products that they choose, and analyzing products' attributes that deliver relevant consequences for them and serve to reach their personal goals (Costa *et al.*, 2004). Therefore, the objective of this paper was to analyze consumers' consumption decision-making process in the context of sensory innovations in wine label design in relation to traditional labels. Specifically, we analyzed two typologies of labeling innovations, a scratch-and-sniff strip and a Thermo-sensitive indicator for Spanish red wine, selected for its traditional labeling and low rates of consumer acceptance of packaging and labeling innovations. To comply with this objective, we adopted the means-end chain (MEC) approach, arguing that consumers do not choose a product solely for its attributes but because these attributes bring benefits for them and they reach their desired personal values through these benefits (Olson & Reynolds, 2001).

Material and methods

Consumers' decision-making structure and the means-end chain theory

As a consequence of the changes in our society such as hyper-communication, globalization, sustainability and health concerns, consumers' behavior has become more and more complex (Capitanio *et al.*, 2009). Therefore, the role that consumers' personalities play in their decision-making processes is increasing in importance as against the role of the product's attributes (Yangui *et al.*, 2016). This means that the purchase decisions of consumers are significantly influenced by their emotional response (Pelegrín *et al.*, 2019). Hence, new products' acceptance is influenced by the features of consumers' personalities which are reflected in the use of the novel product (Barrena *et al.*, 2017).

The benefits obtained by consuming a particular product and how this reveals aspects of a consumer's personality have in recent years been analyzed by the MEC theory, which seeks to understand how consumers link products to self-relevant consequences and values (Tleis *et al.*, 2019). The central premise of this theory, as Walker & Olson (1991) noted, is that consumers' product choice is driven by those characteristics and attributes of the product that serve to achieve specific benefits and personal end values.

This theory posits that consumers' product knowledge is organized in hierarchical levels of abstraction (Reynolds *et al.*, 1995). That is, consumers understand products in terms of perceived attributes, the personal benefits resulting from these attributes and the personal values achieved. This cognitive hierarchy starts with a product attribute and establishes a sequence of links with consumers' values through the benefits and consequences perceived. The stronger the personal link (*i.e.* more direct), the greater the level of abstraction in the decision (Olson & Reynolds, 1983). Additionally, it is possible to divide each level of abstraction (attribute, consequence and value) into different categories. Walker & Olson (1991), for example, categorized attributes, consequences and values as a six-level hierarchy with three upper levels of psychosocial consequences (*i.e.* instrumental values and terminal

values which constitute a consumer's self-knowledge), and three lower levels of concrete attributes (*i.e.* abstract attributes and functional consequences which constitute a consumer's product knowledge) (see Barrena & Sánchez, 2012).

Food purchase intentions and food consumption are highly influenced by emotional and symbolic factors, thus, the MEC theory provides a suitable framework to understand how these decisions are made (Barrena & Sánchez, 2012; Grunert, 2019). Hence, the application of the MEC approach to food products is a useful theoretical framework to understand new product acceptance by consumers, thus helping to develop new product planning and communication strategies (Costa *et al.*, 2004).

Selection of product

Spanish red wine was the product chosen for examination in order to achieve the objective of this paper due to the importance of labeling in this type of wine in terms of purchase decision and the fact that this industry in Spain is generally suffering from unfavorable conditions with decreasing demand and increasing competition[1]. Labeling innovations, as mentioned before, can be a valuable commercial strategy for many wine companies in order to differentiate their products on retail shelves within a competitive environment and to draw consumers' attention in the context of a distressed wine industry. Furthermore, the Spanish wine industry is low on innovative actions when it comes to labeling in relation to other food products (OEMV, 2014).

Additionally, it is important to note that wine is one of the products in which the valuing of intrinsic sensory characteristics is strongly conditioned by extrinsic attributes (Siegrist & Cousin, 2009; Mueller & Szolnoki, 2010). Indeed, the following attributes have been identified as the most relevant when it comes to choosing a bottle of wine across different markets: an appealing label (Seghieri *et al.*, 2007), region of origin (Schamel, 2006); brand (Yue *et al.*, 2006) and grape variety (Goodman *et al.*, 2006). Hence, wine was selected due to the importance of this sector and the importance of extrinsic signs in product selection.

The type of wine chosen to be the focus of this research is "Crianza" red wine[2], in view of the appropriate use of labels and of the price factor. It is not so expensive as to attract only high-income consumers, and not so cheap as to suit only low-purchasing power consumers. Furthermore, this type of wine is one of the most popular red wines among Spanish consumers[3].

After field observations[4] and consulting research on those attributes which are most important to wine consumers, two labeling innovations were proposed to be studied under the scope of consumer acceptance in relation to standard labeling. The types of labels introduced to respondents are described below (see Fig. 1):

a) The "Standard" label: this label includes mandatory information such as brand name, place of production and address, quantity, alcohol content, origin and production year and type of wine in the bottle.

a) b) c)

Figure 1. Design of the three types of labels used: a) the "Standard" Label; b) the "Aroma" Label, based on the scratch and sniff concept; c) the "Thermo-Sensitive" label.

[1] This tendency towards falling consumption has also occurred in France, Italy and Portugal (Duarte Alonso & O'Neill, 2012).

[2] Crianza red wine (Tempranillo 40%, Cabernet Sauvignon 30%, Merlot 30%) was selected given that it is the most widely consumed type of wine in Spain.

[3] The total consumption of red wine in Spain was 100.2 million liters, white wine 30.5 million liters and rosé wine 6.1 million liters. Consumption per capita was 2.2 L for red wine, 0.7 L for white wine and 0.1 L for rosé (Mercasa, 2019).

[4] Observations were carried out of the wine shelves in three supermarkets to see how shoppers behave. Additionally, 30 interviews were carried out with potential wine buyers in the stores where they purchase the wine, proposing different possible innovations in wine labeling and choosing those for which they showed the greatest interest.

b) The "Aroma" label: the reason behind an "Aroma" label was the fact that, along with taste and color, scent is one of the most important attributes for wine consumers (Thach & Olsen, 2006). The "scratch and sniff" surface on the label gives the consumer the chance to smell the product before purchase and have a preliminary idea of what the blend is like. The "Crianza" red wine is a blend of fruit aromas with a touch of vanilla and coconut, and this label provides consumers with a taste of this intense aroma. To the best of the authors' knowledge, this type of wine label is not used in Spain.

c) The "Thermo-sensitive" label: an important factor in wine consumption is having it at the temperature which best brings out its blend. Each type of wine has a different optimal temperature for consumption, 18 ºC in the case of "Crianza". When the bottle is first purchased, it will look like a normal bottle with no added value, however as it is refrigerated a vine design will start to appear, and finally, grapes on the vine will signal optimal consumption temperature. As far as the authors are aware, this type of wine label is only commercialized by one brand of "Albariño" white wine.

The labels were designed following the traditional design for the bulk of Spanish wines in the market using a fictional brand ("Marqués de Navarra") so that consumers perceived it as a traditional brand. The labels also pointed out that the wine was covered by the "Navarra" Designation of Origin (DO). Given the great atomization of the sector and the large number of wine brands in Spain, consumers attribute considerable importance to DO as element of product identification as it functions as a brand.

Data collection

To address the objective of this study, a three-part questionnaire was administered to students and staff of the Public University of Navarre, Spain, in November 2019. Thus, this research, in line with the mainstream literature using MEC methodology, used a convenience sample of wine purchasers and consumers, which is justified by the complexity of the questionnaire (Bitzios *et al.*, 2011). The sample included 100 household food-purchasers – all of them wine consumers – who agreed to take part after an email invitation. The sample size was similar to other studies that use this methodology and it is higher than the number that Costa *et al.* (2004) recommend for the use of the hard laddering technique, which is 50.

The surveys consisted of three parts and the mean duration was 50 min. Participants received a detailed explanation of the content of the questionnaire and the instructions to complete them. Each participant in the study was shown the three labeling prototypes prior to taking the survey. This process was repeated for groups of 10 participants. In the first part of the questionnaire, respondents were asked to provide their consumer habits concerning wine. In the second part, there were questions to identify MEC characteristics (*i.e.* attributes, consequences and end values), applying the laddering survey method. Finally, the last part of the questionnaire asked for respondents' socio-demographic characteristics.

Table 1 compares the socio-demographic characteristics of the consumer sample analyzed to those of the population of Spain as a whole. No significant differences were found in average age, respondents' gender or average family size. It can be seen that the average age of the sample and population is around 44 years and the average family size is 2.5 members. With respect to gender, there is a slightly higher percentage of men in the sample than in the population (55% *vs* 49%), although this difference did not prove to be significantly different. However, there are significant differences in relation to the level of education; the sample shows a higher level, which is logical given that the research was carried out within a university community. Although there are no major differences between the sample and the population in terms of sociodemographic characteristics, since it is a convenience sample the results cannot be extrapolated to the rest of the

Table 1. Socio-demographical characteristics of the sample and population.

	Sample	Population of Spain	F/χ^2	Sig.
Age	44.5	43.7	5.872	0.426
Family size	2.55	2.50	4.743	0.411
Education				
Primary	10.0%	20.1%	0.796	0.043
Secondary	18.9%	46.9%		
Higher	71.1%	33.0%		
Gender				
Male	55.1%	49.0%	1.517	0.139
Female	44.9%	51.0%		

Source: Authors, based on INE (2011).

population in statistical terms. They are valid as a qualitative approximation of the behavior of consumers with respect to the topic analyzed.

Wine consumption frequency in the sample analyzed was as follows: 62% consume wine once a week or less and 38% more than once a week. The most usual shopping location for wine was supermarkets (81%) and the average price paid for a bottle of Crianza red wine was 5.68 €. Willingness to pay for the Thermo-sensitive label was 6.24 € and 6.05 € for the aroma label, which suppose respectively an increase of 9.8% and 6.5% over the average price of the control label.

Laddering survey

Laddering technique is a qualitative method that allows respondents to uncover the motivations of their product choice and consumption (Reynolds & Gutman, 2001). The objective of this method is to reveal the connecting structures that the respondents make between a product's attributes and its associated consequences and values (Costa *et al.*, 2004). The initial stage of this method consists of an identification of the main attributes of a specific product for consumers by applying a variety of techniques such as pilot surveys, interviews with experts and focus groups. In the second, survey phase; respondents indicate which attributes are important for them and through probing questions they indicate why these attributes are important for them in terms of the perceived consequences and values (Costa *et al.*, 2004). Finally, to create the hierarchical value maps, the concepts obtained from the surveys are combined into a reduced form (*i.e.* the underlying construct) and the number of links between them is used to construct the implication matrix which is used to plot a diagram of the most frequent constructs and links (Brunsø *et al.*, 2002; Costa *et al.*, 2004). The data processing was carried out using MECanalyst[5].

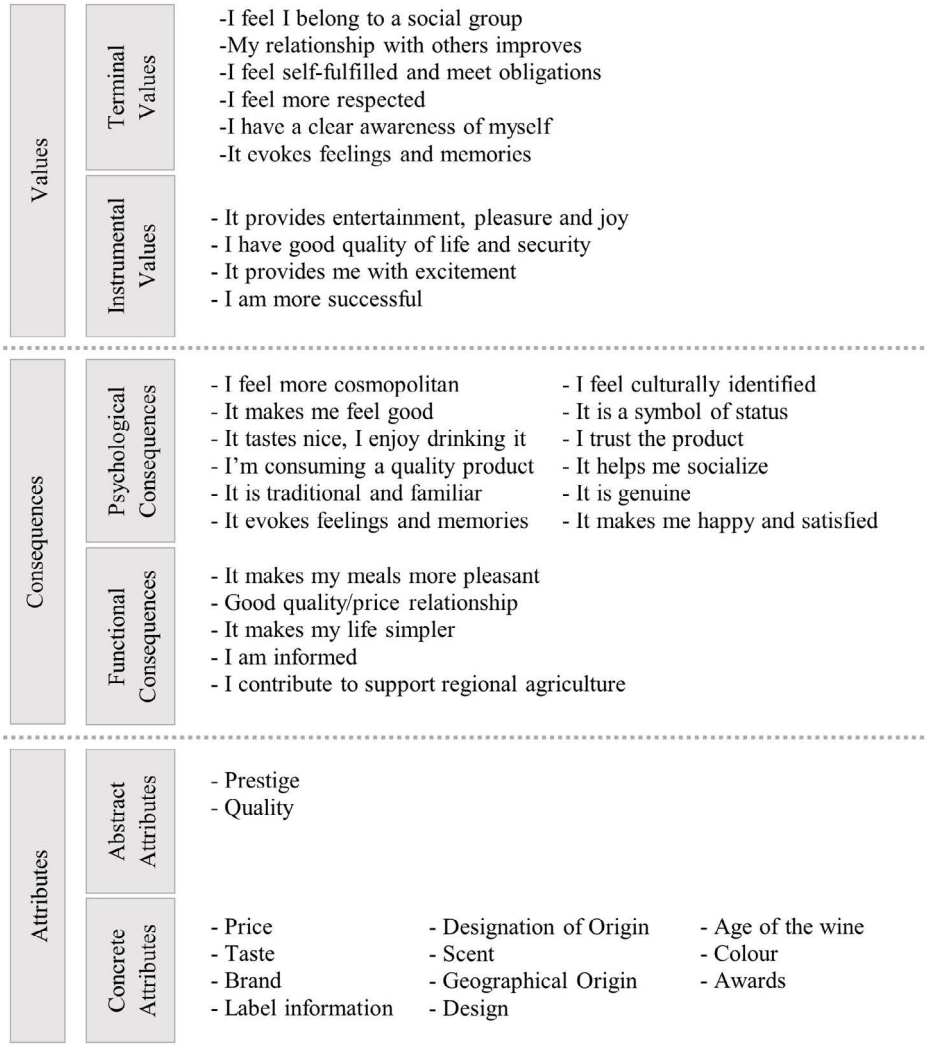

Figure 2. Selected attributes, consequences and values.

[5] This software (MECanalyst plus, vers. 1.0.8, Italy) has been widely used by prior research based on the MEC approach (Costa *et al.*, 2004; Crofton & Scannell, 2020).

Following the above methodology, this study analyzed thirteen attributes for wine (Fig. 2), which were selected based on the literature review and experts' opinions collected from a pilot survey[6]. Furthermore, seventeen consequences were analyzed according to the review of studies applying the MEC methodology to wine and similar products. Regarding end values, this study addressed ten personal values defined by the list of values (LOV) proposed by Kahle (1986), which are widely used in the analysis of food consumer's decision-making (Chryssohoidis & Krystallis, 2005).

The main laddering methods that can be used to address the objective of this study are unrestricted personal interviews (*i.e.* soft laddering) and the use of structured questionnaires (*i.e.* hard laddering). The application of hard laddering techniques is easier, needs less time and respondents are less influenced by the interviewer, allowing for a focus on specific ladders (Hansson & Lagerkvist, 2015). Therefore, this study applied hard laddering, the results of which are similar to those using the soft one (Russell *et al.*, 2004). To uncover the MECs within these hard laddering techniques for large samples (>50) we adopted the association pattern technique (APT) that consists of two independent matrices of attributes-consequences and consequences-values (Russell *et al.*, 2004). This APT's matrices present a list of a determined set of attributes, consequences and values to respondents to measure their subjective associations between them and capture the divergence of their responses (Ter Hofstede *et al.*, 1998).

To represent the linkages between the above attributes, consequences and values in a hierarchical value map (HVM), there is a need to establish a cut off procedure. This requires the establishing of the number of times that a linkage needs to be mentioned (*i.e.* cut-off point) in order to be represented (Leppard *et al.*, 2004). High frequencies simplify the interpretation of the HVM as few linkages are plotted but also imply an important loss of information. By contrast, low cut-off points capture a lot of information but their interpretation is complex and their representation is not clear. There are different procedures to determine the cut-off point such as the determination of a fixed level depending of the sample size or the determination of a level that allows for representing 70% of linkages (Reynolds & Gutman, 2001). However, these rules of thumb are not always appropriate for hard laddering techniques and much of the MEC literature agrees that the ideal solutions are those that provide interpretable HVM and minimize the loss of information (Reynolds *et al.*, 2001).

The cut-off point or level in this study has been determined following the "top-down" method defined by Leppard *et al.* (2004), which is based on the importance of the linkages identified. This importance is measured by the ranking order of the links' frequencies in the implication matrix. This approach establishes the creation of different HVMs at different cut-off levels, beginning with the highest level that creates a basic HVM that is easy to interpret, though with an important loss of information. Subsequently, HVMs are created using the ordered cut-off levels. This procedure allows the creation of different HVMs by adding information and increasing their difficulty of interpretation. Additionally, it allows for analyzing how important associations between different levels emerge since lower levels of abstraction lead to higher numbers of links. Finally, another important advantage of this approach is that it allows group comparison analyzing the same cut-off levels independently of the sample size of each group (Leppard *et al.*, 2004).

Results

Attributes, consequences and values

A level 8 HVM was created for each label. Each HVM represents all the attributes-consequences and consequences-values relations equal to or higher than the frequency of the eighth relation in terms of importance level. Table 2 shows that the cut-off point thus established following the method proposed by Leppard *et al.* (2004) is different for each label and level of abstraction, which allows for comparing different HVMs as has been stated above (all cases represent values over 42%).

Figures 3, 4 and 5 show the HVM for each type of label for a level 8 cut-off point. Each chain component (attributes, consequences and values) of the HVM indicates the share of respondents interviewed who revealed this association. The results show that the association patterns regarding the attributes analyzed are similar for the three types of labels. Indeed, looking at the specific attributes, the respondents showed that they are interested in aspects such as, "taste", "scent", "price", "label information" and "DO".

On the other hand, abstract attributes coincide in the perception of wine as a quality product only in the cases of Thermo-sensitive and aroma labels. It is important to highlight that concrete attributes predominate over abstract ones in the three types of labels. However, there is an exclusive concrete attribute in the standard label, namely "brand", and in the case of the two innovative labels there appear the "design" concrete attribute and the "quality" abstract attribute. Thus, in the case of a

[6] A pilot survey was carried out with 10 wine experts (university professors, winery managers and public administration experts) to indicate which attributes they considered to be the most important when it came to buying and consuming wine.

Table 2. Cut-off points between the eight levels of abstraction and frequency of occurrence (%).

Level	Linkages	Standard Label		Thermo-sensitive Label		Aroma Label	
		Cut-off	%	Cut-off	%	Cut-off	%
1	Attribute-Consequence	88	88.0	77	77.0	78	78.0
	Consequence-Value	81	81.0	77	77.0	76	76.0
2	Attribute-Consequence	78	78.0	73	73.0	76	76.0
	Consequence-Value	74	74.0	71	71.0	74	74.0
3	Attribute-Consequence	77	77.0	72	72.0	74	74.0
	Consequence-Value	73	73.0	66	66.0	69	69.0
4	Attribute-Consequence	75	75.0	68	68.0	66	66.0
	Consequence-Value	63	63.0	63	63.0	65	65.0
5	Attribute-Consequence	69	69.0	61	61.0	63	63.0
	Consequence-Value	61	61.0	55	55.0	57	57.0
6	Attribute-Consequence	65	65.0	60	60.0	60	60.0
	Consequence-Value	59	59.0	53	53.0	56	56.0
7	Attribute-Consequence	64	64.0	58	58.0	55	55.0
	Consequence-Value	48	48.0	52	52.0	47	47.0
8	Attribute-Consequence	63	63.0	55	55.0	54	54.0
	Consequence-Value	42	42.0	43	43.0	42	42.0

standard wine label consumers give importance to the brand, whereas in innovative labels brand ceases to be significant and design and perception of wine quality gain importance.

Looking at the consequences or benefits perceived, respondents identify both functional and psychological consequences for the three typologies of labels analyzed. Among the psychological consequences, respondents

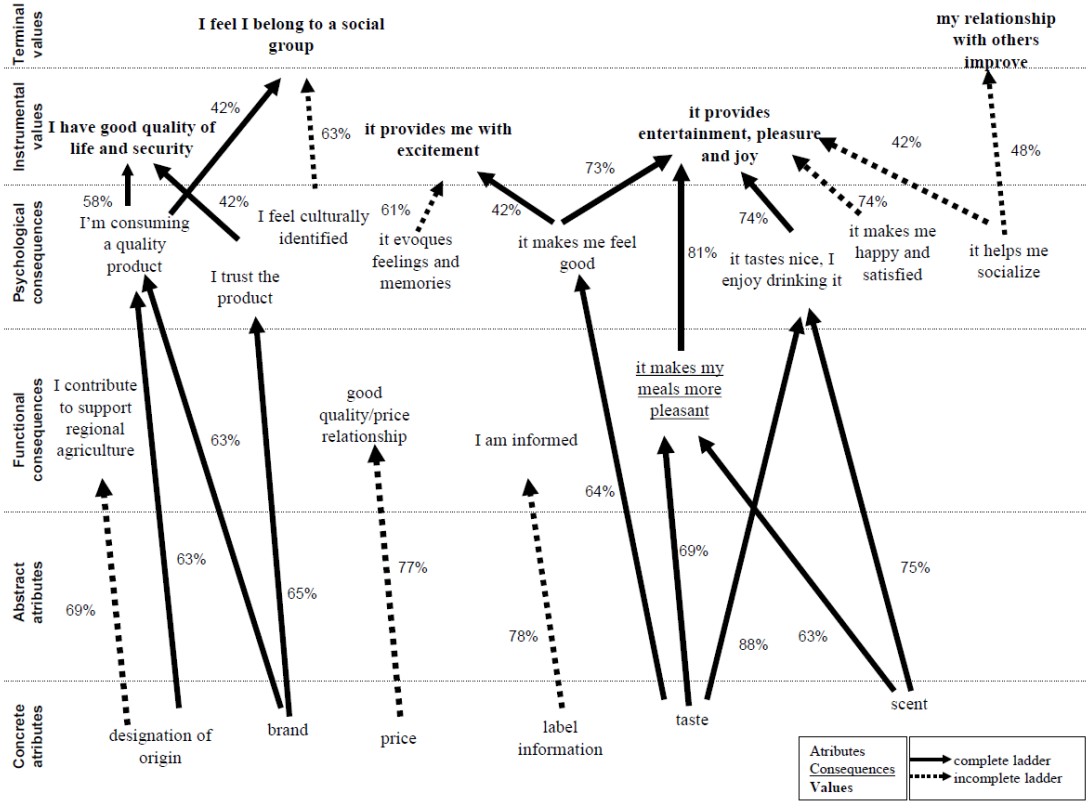

Figure 3. HVM for the Standard Label (Level 8).

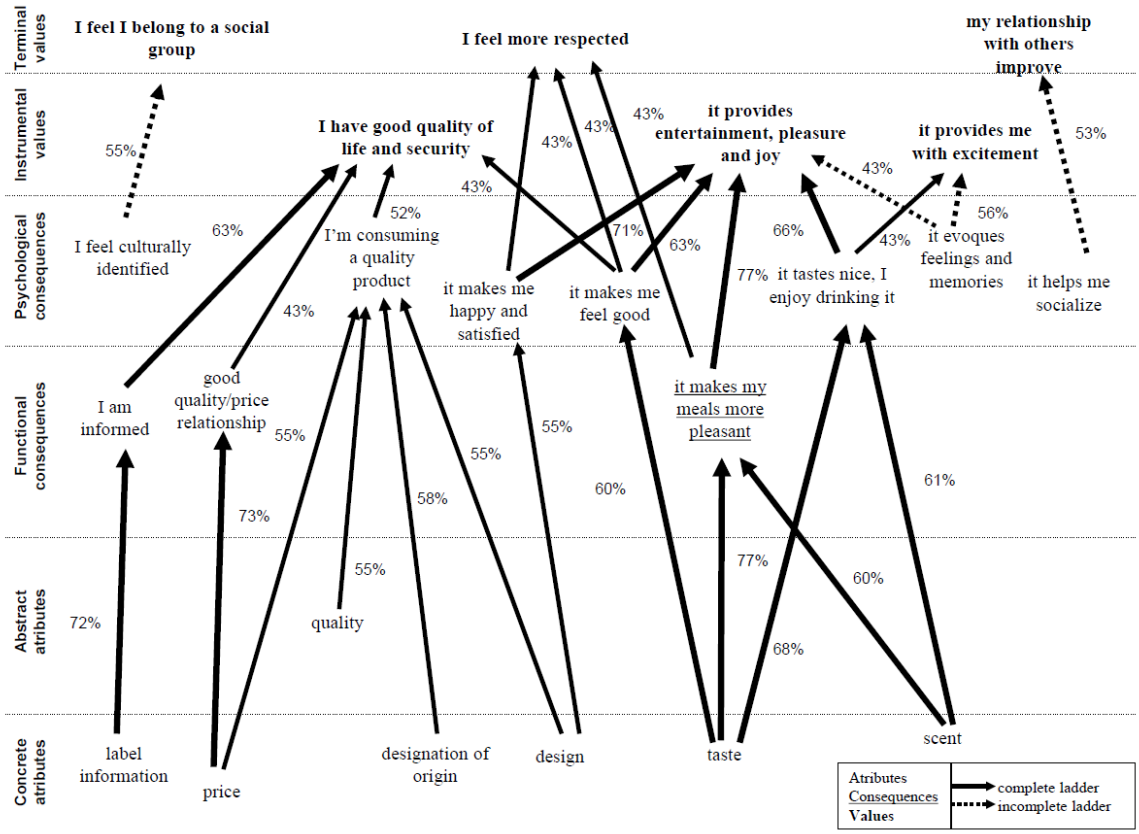

Figure 4. HVM for the Thermo-sensitive Label (Level 8).

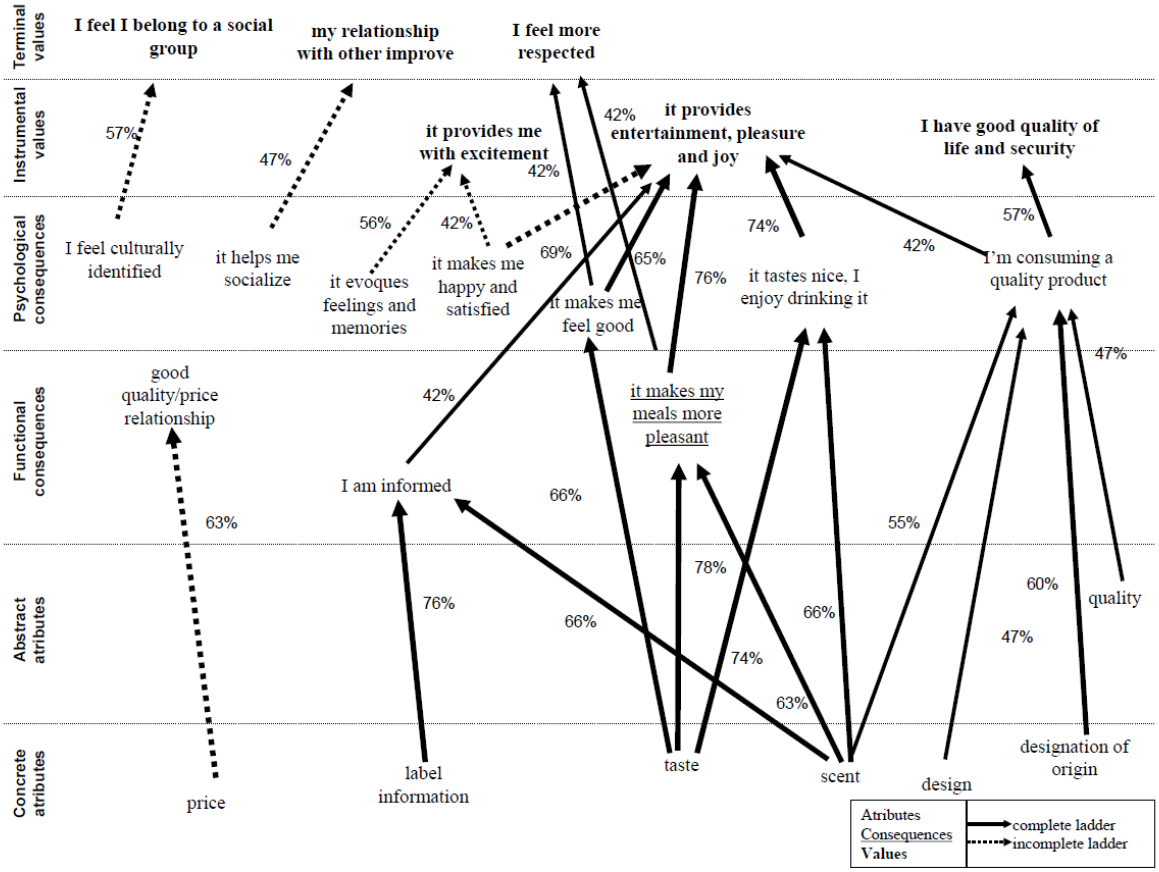

Figure 5. HVM for the Aroma Label (Level 8).

highlight the perception of wine as a quality product and the satisfaction that its consumption produces, as well as emotional aspects linked to social relations and culture. In terms of functional consequences, respondents are interested in the relationship between quality and price, the information it provides, and the effect that it produces to make their meals more pleasing.

Finally, regarding the end values addressed, we found that respondents share – for the three types of labels – instrumental values related to security and quality of life, excitement, as well as pleasure, enjoyment and entertainment. Looking at the terminal values, those related to the social nature of wine consumption, such as belonging to a social group and the improvement of their social ties, are revealed as being the most important independently of the label. However, we found that respondents associate the terminal values of being socially respected only for the Thermo-sensitive and aroma labels.

Complete chains

In terms of the chains identified, Figs. 3, 4 and 5 show six interrelations common for the three types of labels which are worth mentioning here. The most important refer to two concrete attributes such as "taste" and "scent" associated with the consequences of enjoying drinking it due to its taste and the capacity of wine to improve the perceived pleasure of meals. These consequences are linked to an instrumental value of entertainment, pleasure and joy. Furthermore, the "taste" attribute is linked to the consequence of feeling good, and to the instrumental value of entertainment, pleasure and joy. Another common axis is the relations established between the "DO" attribute with the consequence of self-asserting the quality of the product and the instrumental value of security and quality of life.

A series of differences were observed across the three types of labels in some of the established ladders. On standard labels, those ladders highlighting the role of the brand were particularly relevant. The "brand" attribute is associated with the consequence of asserting the products' quality and trustworthiness, which are linked to the instrumental values of security and quality of life and social group membership. In the case of the innovative labels in this study, "brand" did not appear as an attribute and obviously, there were no relations with the rest of the elements.

In terms of the Thermo-sensitive and aroma labels, a series of ladders were observed which were exclusive to the innovative labels. Consumers were able to establish more complete ladders with the "taste" and "scent" attributes in relation to these innovations, and associate both of them through different consequences to the final value of social significance (*i.e.* respect and status recognition). The attribute "scent" had more complete ladders for the aroma label, being related to the functional consequence of feeling well informed. Another aspect worth noting on the HVM of the innovative labels was the presence of complete ladders with the concrete attributes of "label information" and "design". The attribute "design" is related to security and is more important for Thermo-sensitive label than for aroma label.

Incomplete chains

As can be seen in the three hierarchical value maps, a series of incomplete chains emerge in the three types of labeling. It can also be seen that the number of incomplete ladders (which only establish a relationship between attribute-consequence or consequence-value) was higher in the case of standard labeling. This result indicates that consumers were not capable of generating complete chains to a greater extent when faced with the more usual labeling, which seems to indicate that the process is less complex. A more detailed analysis showed that in the case of the two innovative labels, respondents were able to establish complete chains with the attribute "label information", which did not happen in the case of the standard label, which again gives an idea of the importance of this aspect in the new labels. In relation to the incomplete consequences-values chains in the three maps unfinished ladders with different values of the consequences "it helps me socialize", "I feel culturally identified" and "it evokes feelings and memories" can be seen. It seems, therefore, that consumers were capable of considering these consequences when consuming wine, but not linking them to any particular attribute, regardless of the label.

Levels of abstraction

The results show that the different types of wine label generate different association patterns between wine attributes and their abstract consequences and values in consumers. It suggests that there exist differences in wine consumers' decision-making, and its complexity varies for different labels that introduce sensory innovations. However, a statistical analysis was required in order to establish that the process is actually more complex. Table 3 summarizes the complete linkages identified (*i.e.* ladders) and its structure of levels of abstraction for each type of label. The biggest difference across labels responds in the first place to the number of complete ladders on each HVM (higher in the case of innovative). This reveals that the purchase process was much more complex when consumers were presented with sensorial labels rather than familiar products. Furthermore, the HVM for the Thermo-sensitive and aroma labels included a higher number

Table 3. Complete chains for each type of label.

Attributes	Consequences	Values	Standard Label	Thermo-sensitive Label	Aroma Label
Concrete	Funtional	Instrumental	2	4	4
		Terminal	-	2	2
	Psychological	Instrumental	7	11	9
		Terminal	2	2	1
Abstract	Functional	Instrumental	-	-	-
		Terminal	-	-	-
	Psychological	Instrumental	-	1	2
		Terminal	-	-	-

of ladders with terminal values. Table 4 shows the mean number of the attributes, consequences and values based on each category for each label. Regarding the elements revealing significant differences, values were always higher in the case of innovative labels.

Discussion

Within wine industry's innovative marketing strategies, those related to labels offer the widest scope of possibilities as labeling plays an important part in the transfer of information consumers need to make a purchase decision in retail stores. Label innovation in the wine sector has been largely related to changes in terms of visual codes. However, labels can also attract consumers through other senses by offering new sensory experiences and new functionalities. Our knowledge about the differences in consumers' cognitive structure when presented with sensory innovations in wine label design by comparison to traditional labels is scarce. Thus, to fill this gap, we proposed an exercise applying the MEC, which establishes a relationship between relevant attributes in a product and consumer's personal characteristics with the purpose of finding out whether these innovations are relevant and interesting for the final customer. Specifically, we used Spanish "Crianza" red wine with a traditional label (Standard Label) to introduce two innovative wine labels: Thermo-sensitive Label and Aroma Label.

Our results showed that related search and experience characteristics such as taste, scent and price, label information and DO are important aspects in the three types of wine labels analyzed. Taste is probably the essential attribute in any food product and the same goes for wine, as pointed out by Bernabeu *et al.* (2012). Regarding DO, they are an essential competitive strategy based on differentiation adopted by traditional wine-producing countries, and it is one of the extrinsic signals searched for by consumers when it comes to selecting wine in Europe (Martínez-Carrasco *et al.*, 2005; Mtimet & Albisu, 2006). However, wine brand was a relevant attribute only in the case of the standard label, whereas brand loses importance in innovative labels as label design gains importance and is perceived as a signal of quality. Brand is used as a quality mark on standard labels (Thomas & Pickering, 2003; Mueller & Szolnoki, 2012), whereas labeling innovation gains importance in the case of innovative design (Westerman *et al.*, 2013; Cichero, 2017).

The number of functional and psychological consequences elicited for each type of label regarding to the initial variables analyzed (Fig. 2) was similar. This evidence does not clarify the purchase involvement of the product analyzed, requiring an analysis of the HVM's complete ladders. HVMs allowed to identify the product as a "feel" product (high involvement) purchased for emotional requirements or a "think" product (low involvement) purchased for functional characteristics (Santosa & Guinard, 2011). The psychological consequence of confidence in the product appears in the case of the standard label,

Table 4. Mean and F-statistics of attributes, consequences and values for each type of label.

		F	Standard Label	Thermo-sensitive Label	Aroma Label
Attributes	Concrete	0.715	5.32	5.28	5.56
	Abstract	7.741**	1.21	2.30	2.45
Consequences	Functional	4.012**	4.22	5.10	5.22
	Psychological	7.453***	1.89	3.59	3.86
Values	Instrumental	4.541**	5.48	5.35	5.76
	Terminal	5.151**	2.74	3.85	3.56

Significance levels: *** $p< 0.01$, ** $p< 0.05$, * $p< 0.10$.

which shows consumers' reliance on traditional labels (already observed in Thomas & Pickering, 2003), an aspect not present in the case of innovative labels. This means that following the usual codes reassures consumers due to their familiarity (Heilman *et al.*, 2000). Therefore, wine companies should make significant efforts to reinforce consumers' trust when marketing wine with innovative labels. Additionally, our results also revealed that exits differences regarding the end values addressed. The terminal value of being socially respected was relevant only for the Thermo-sensitive and aroma labels. This reveals that feelings of social integration and respect are perceived in relation to wine consumption with the innovative labels. These findings may be explained by the fact that consumers tend to buy innovative products because they conceive this behavior as a form of leadership and as a way to improve their social status (Shelomi, 2015). Additionally, among Spanish consumers, the notion that wine consumption and market knowledge – and its innovations – are related to social status and it is socially significant is strongly embedded (Pascual *et al.*, 2017).

The results obtained through the HVM (*i.e.* established ladders) reveal that the product analyzed had an important emotional dimension in terms of purchase and consumption ("feel" product). One of the most desired values – regardless of the type of wine label – is drinking pleasure associated with attributes "taste" and "scent", a logical association in the food domain. Mittal & Lee (1989) have already explained that the purchase of products is especially influenced by hedonic factors. Moreover, the DO label is seen by consumers as synonymous with quality and it generates confidence in the product (De-Magistris *et al.*, 2014). We also found that "brand" attribute was associated with the consequence of asserting the products' quality and trustworthiness only in standard labels. This is in line with Lockshin *et al.* (2009), who pointed out that the main reason to choose Spanish wines from different brands with similar designs was the reputation of a brand, this being less significant in the case of new designs.

For innovative labels, we found higher number of complete ladders linking concrete attributes (*e.g.* price, taste, scent and label information) to the end values of social significance. In this sense, respondents were not able to complete a ladder with the "label information" concrete attribute for the standard label, they seem to be capable of doing it when it comes to Thermo-sensitive and aroma labels, which means they find themselves better informed with this type of labeling. Thus, innovative labels can create sensory and hedonic expectations in consumers as well as providing them with information (Ares & Deliza, 2010). Consumers can feel better informed through innovative sensory labels as they do not usually apply enough cognitive resources to read the written information at the time of purchase and their decisions are made through heuristics (Festila & Chrysochou, 2018).

On the other hand, the "design" attribute was also observed, which is only to be expected as it is a key element in the appearance of this type of innovative labels in relation to consuming a quality product, which provides security (Ares *et al.*, 2011; Cichero, 2017). In the case of the label which includes another sense (aroma), label design was less relevant. This result is particularly important for wine companies with low marketplace positioning based on their brand. Finally, as expected, the aroma label had more complete ladders for the "scent" attribute with different consequences and values. It is worth noting that "scent" was related to the functional consequence of feeling informed, an objective pursued with this type of labeling which seems to have been achieved. According to Elder & Krishna (2010), food descriptions aimed at appealing to multiple senses generate improved perceptions when compared to descriptions appealing to only one sense.

To summarize, our study reveals that innovative labels have a higher number of relations and higher level of abstraction. This shows that when presented with innovative labeling consumers apply a more complex selection process due perhaps to a higher level of reflection. This, together with the greater attention to the terminal values and abstract attributes, suggests that the consumers' decision-making process related to innovative labeling is more complex regarding the level of abstraction because they look for traits matching their personality. Thus, wine with innovative labels could be considered as a higher-involvement product (Santosa & Guinard, 2011). Our results revealed that, for Thermo-sensitive and aroma labels as innovations in wine labels, the brand loss importance in consumers' selection process, being the new label, its design, information and attributes, relevant concepts in the selection process due to its association with quality and social significance.

Labeling innovations could be a great opportunity for wine small and medium-sized enterprises (SMEs) to improve their position and obtain better results in a highly competitive market. The use of multi-sensory designs can significantly affect product differentiation as it has a positive impact on consumer attraction and leads to a positive attitude towards buying it. In this sense, these innovations can be an effective strategy for companies to improve consumers' sensory experience of their wines and achieve better results. Besides, innovative labels are related to better social integration and respect when it comes to wine consumption. These are aspects that should be highlighted by advertising campaigns for label innovations.

Despite the contributions of this study, it also has limitations that need to be acknowledge. The generalizability of the findings reported here should be corroborated and improved by further research using randomly population samples due to is the convenience sampling procedure used. Furthermore, future research should be carried out

in other product categories in order to increase the external validity of results and it would be especially interesting to apply in products involving less consumer involvement in the purchase process. Moreover, it should be carried out in other locations in order to find out whether the results are confirmed and the sample size should be expanded. Further to this, whether or not these results are confirmed in other markets where the wine sector is more innovative and in other food industry sectors remains to be verified. Another pending aspect is how to adapt these labeling innovations to online shopping as aspects such aroma cannot be used on web pages. Besides, these innovations involve additional costs and it remains to be seen whether consumers will be willing to accept the premium this supposes in relation to the added value in the product.

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