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SUBJECTIVE KNOWLEDGE, PRODUCT ATTRIBUTES AND CONSIDERATION SET:

THE WINE CASE

Purpose - The purpose of this article is to show that consumers' expertise of a product influences the number of attributes considered as important, the importance given to the attributes as well as the size and the content of the consideration set (CS).

Methodology - A quantitative empirical study was carried out with 287 French wine consumers.

Findings - The results show that the attributes which were considered as important by the novices differ from those considered important by the experts and that the number of important attributes given by the novices (2) is lower than those given by the experts (7). Furthermore, the results show that the size of the CS itself is also influenced by subjective knowledge. On the other hand, this is not the case for the content of the CS.

Research limitations and implications - The empirical study only focuses on one product category. The data were collected on the basis of statements rather than observations, which is liable to distort the results. This study shows that the visual attributes such as the design and the packaging are not sufficient to sell wine to French consumers, even if they are novices in this field.

Originality - While most research devoted to the effects of the CS focus on a single dimension of it, the empirical study tests simultaneously the effects on the size and on the variety of the CS, which is analysed according to both a qualitative and quantitative approach.

Keywords: Subjective knowledge, consideration set size, consideration set variety, product attributes, perceived risk.

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SUBJECTIVE KNOWLEDGE, CHOICE ATTRIBUTES AND CONSIDERATION SET: A WINE APPLICATION

1. Introduction

The French vine-growing and wine-making sector has been in crisis for several years and it appears obvious today that this crisis is of a structural rather than a conjectural nature. The ways wine is consumed are changing in France where it is losing its characteristic as a drink consumed daily to accompany meals. Since 1980, the proportion of regular consumers (consuming every day or nearly) has steadily decreased, falling from 51% to 17% in 2010. At the same time, the share of occasional consumers has increased by fifteen percentage points and the proportion of non-consumers has doubled, reaching 38% in 2010¹. France is gradually moving towards a form of wine consumption which is more occasional as well as being more diversified. This drink is no longer restricted to meals and can be taken as an *apéritif*, during a moment of relaxation with friends or in the evening as a cocktail like, for example, the *kalimotxo*, an equal mix of wine and cola, more commonly consumed by young people.

Contrary to a generally accepted idea, connoisseurs are not so numerous in France. The knowledge of wine varies between consumers and the moderate level of knowledge which characterizes a majority of consumers is not necessarily due to a falling consumption. Indeed, wine consumption and wine knowledge are not systematically linked. Many of the traditional heavy consumers of wine really didn't know much more than novice consumers. Wine was just a beverage and they consumed local wines which were relatively inexpensive without being interested in learning about wine in general². Recently, Latour and Latour (2010) describe a specific segment of regular American consumers of wine but whose knowledge remains basic: "The aficionado consumer is one who consumes and enjoys a hedonic product regularly but has failed to obtain product expertise from his/her many experiences » (Latour and Latour, 2010, p. 688).

It is therefore necessary today to draw a distinction between the expert consumer – a consumer whose level of knowledge is upper to the average - and one who is a novice – whose level of knowledge is lower than the average. With wine being an extremely complex product which is characterized by a multitude of attributes, it has become vital, for professionals, to identify the choice attributes which are considered important by the expert consumers and by the novice ones so that what is offered is presented in the appropriate way. Furthermore, this deeper knowledge of the attributes favoured by both parties when choosing wine must be considered according to the consumption occasions.

Previous research investigates either the effect of subjective knowledge (SK) on the consideration set (Alba and Hutchinson, 1987, 2000; Aurier *et al.*, 2000; Johnson and Lehmann, 1997; Punj, 1989; Wirtz and Mattila, 2003) or the effect of SK on choice attributes (Aurier and N'Gobo, 1999; Dodd *et al.*, 2005; Edward and Mort, 1991; Lockshin and Rhodus, 1993; Perrouy *et al.*, 2004; Solomon, 1998). Thus, we proposed to study the effect of SK and consumption occasions on the consideration set (CS) and choice attributes.

To our knowledge, research dedicated to the CS did not examine its contents in detail. Studies focused mainly on the CS size (Alba and Hutchinson, 1987, 2000; Aurier *et al.*, 2000; Johnson and Lehmann, 1997; Punj, 1989; Wirtz and Mattila, 2003). For that reason, the effects of SK and consumption occasion on the CS will be also analysed at its contents level with a qualitative method. Except Heeler *et al.* (1979), previous studies on choice attributes failed either to compare the importance of a given attribute and its rank in a choice process.

¹ GFK/ISL for France AgriMer, July 22, 2010.

² We thank the reviewers for this comment.

As such, the purpose of this article is to answer two questions: 1) which attributes are considered as important and in which order are they used by consumers when they choose a product, according to both the consumption occasion and their level of SK and 2) what products does the consumer bring to mind for a given choice occasion, according to his/her SK and to the perceived risk?

The presentation of the theoretical framework is followed by a conceptual framework and research hypotheses. The methodology is then explained and is followed by the presentation of the results which will be the subject of the discussion at the end of the article.

2. Background

Subjective knowledge

Product knowledge is part of consumer expertise. Indeed, expertise defined as the possession of a large body of knowledge and procedural skill (Chi *et al.*, 1982) is a multidimensional construct comprising familiarity with the product category – which results from accumulated experience with the product and knowledge of the product (Alba and Hutchinson, 1987). It influences the different phases in the decision-making process (Bettman and Park, 1980; Maheswaran *et al.*, 1996; Mitchell and Dacin, 1996). Regarding wine, expertise results from knowledge and sensory ability (Frøst and Noble, 2002; Johnson and Bastian, 2007). But given that in France three of four bottles of wine are bought in hypermarket and supermarket, sensory skills are more rarely used to choose a wine. Knowledge includes a subjective dimension – what consumers think they know – and an objective dimension – what they really know – (Alba and Hutchinson, 2000; Brucks, 1985; Park *et al.*, 1994). SK has been shown to be a stronger motivation of purchase-related behavior than objective knowledge (Selnes and Gronhaug, 1986). There is no significant difference in the impact of objective knowledge and SK on the width and depth of information search and information processing (Mishra and Kumar, 2010). SK has been reported through empirical testing to be more important to the definition of knowledge because it influences the consumer's perception of their ability to process information (Moorman *et al.*, 2004). A meta-analysis of 51 empirical findings associated with the relationship between objective knowledge and SK provides further evidence that objective and SK are significantly – although moderately – positively related ($r = 0.37$) and that this correlation is stronger for products ($r = 0.57$) versus non products ($r = 0.32$) (Carlson *et al.*, 2009). In the same meta-analysis, this correlation is estimated at 0.42 for experience goods. Now, wine can be considered as an experience good that must be consumed before consumers learn about quality. Moreover, according to Perrouty *et al.* (2006), SK is a key determinant of wine consumers' behavior and an appropriate basis for determining whether consumers are wine experts or novices.

According to these findings, this research will focus on the subjective dimension of the consumer knowledge. Thus, throughout this article, the expert consumer is one who perceived itself as a knowledgeable consumer compare to other consumers. He differs from experts described by Parr *et al.* (2002) for whom experts in wine are established winemakers, wine science researchers and teaching staff regularly involved in winemaking and/or wine evaluation, wine professionals (wine judges, wine writers, wine retailers), graduate students in viticulture and oenology who had relevant professional experience, or persons with extensive (> 10 years) history of wine involvement (i.e. family history, extensive wine cellar, regular involvement in formal wine tasting).

Consumption occasions and consideration set

The CS is defined as the set of brands brought to mind on a particular choice occasion (Nedungadi, 1990). The CS has been shown to influence buying behaviour (Shoker *et al.*, 1991; Kardes *et al.*, 1993). Indeed, when a product is consumed frequently, the consumer

tends to memorize a stable CS associated with different consumption occasions (Barsalou, 1983). The CS is characterized by several dimensions: its size, (the number of alternatives considered) and its variety, which refers to the degree of distinction between the products present in the CS (Desai and Hoyer, 2000). Wine can be consumed in different occasions (eating with friends / with family, intimate dinner, celebration, drink by self, etc.). It has been shown that choosing wine is an occasion-based behaviour (Aurifeille *et al.*, 1999; Quester and Smart, 1998).

Perceived risk

The level of risk perceived by the consumer towards the product affects his/her buying decision (Dowling, 1999). Roselius (1971) and Jacoby and Kaplan (1972) identified six categories of risk: the functional risk (a fault which makes the product unfit for consumption) ; the financial risk (will the consumer obtain good value for money ?) ; the physical risk (a product which is perceived as harmful to the health) ; the psychological risk (the risk that the consumer will have low self-esteem if (s)he buys a product which will not provide satisfaction) ; the social risk (the risk that third parties – friends, acquaintances or family – will judge the buyer poorly if (s)he has made a bad choice) and the risk of loss of time (time spent evaluating the alternatives). When they perceive a high level of risk, consumers deploy risk reduction strategies (Dowling and Staelin, 1994). Perceived risk is a key determinant of wine choice. For example, perceived risk influences the use of extrinsic cues, such as price and expert opinion (Aqueveque, 2006) and the preference for traditional products (Campbell and Goodstein, 2001). Extrinsic cues like reputation, advice from staff and previous consumption of the wine are found to be risk-reduction strategies (Lacey *et al.*, 2009).

3. Conceptual framework and research hypotheses

Effect of subjective knowledge on the importance of the attributes

A product, whatever it is, is defined by a set of intrinsic and extrinsic attributes. Intrinsic cues are those that form any physical part of the product and cannot be altered without changing product performance or technical specifications; alternatively, extrinsic cues are any aspects only associated with the product (Aaron *et al.*, 1994). Brand name, label attractiveness, design of the bottle, origin and price are good examples of extrinsic attributes of wine whereas organoleptic qualities are intrinsic cues. Numerous products are put on the market in conditions where the consumer does not have the possibility to test them before buying. This is the case for food products sold by large retailers. For these products, the consumer therefore has to rely on extrinsic attributes to evaluate, *a priori*, their quality. Wine is one of these products. The choice would be much simpler if consumers could taste the wine and appreciate its organoleptic qualities. As in the majority of cases, the consumer does not have this possibility, (s)he must rely on information which is available such as the price, the region of production, the vintage, the packaging, the brand name, recommendations etc. Wine is a product which is characterized by multiple extrinsic attributes. For example, d'Hauteville and Sirieix (2007) identify eight extrinsic attributes considered as wine quality indicators: region of production, brand name, AOC (*Appellation d'Origine Contrôlée*) label, “*vin de pays*” (local wine) label, medal/award, grape variety, person who bottled the wine and alcoholic content. According to Quester and Smart (1998), wine is a combination of 13 attributes among which appear the fermentation, the label, the back-label and the style of the wine. Cohen. (2009) suggests 11 attributes like recommendations, brand name, food/wine harmony and country of origin. Verdu-Jover *et al.* (2004) develop a measurement scale including 21 items grouped into seven factors : origin (brand name, region, *appellations*, etc.) ; image (image of the wine, opinion of friends, the press, experts, wine waiters etc.) ; presentation

(bottle, label, etc.) ; age ; year of production and, finally, two dimensions relating to extrinsic cues (organoleptic qualities).

A few studies focused on the influence of the expertise on the consumer's choice process (Aurier and N'Gobo, 1999; Dodd *et al.*, 2005; Edward and Mort, 1991; Lockshin and Rhodus, 1993; Perrouy *et al.*, 2004; Solomon, 1998). Aurier and N'Gobo (1999) investigated the impact of knowledge on the ability to memorize attributes and on the importance given to attributes. As product knowledge improves, consumers use more and more attributes to make their choice, which leads us to hypothesis H1.

H1. Consumers with a higher SK level consider a higher number of attributes important than consumers with a lower SK level do in their buying decision.

Researchers have found that experts and novices differ in the content and organization of their knowledge and as a result exhibit large variances when they perform some product-related tasks (Aurier and N'Gobo, 1999). More knowledgeable consumers rely more on functional, intrinsic and less on perceptual attributes. On the contrary, less knowledgeable individuals are more likely to rely on schema-based inferences (Alba and Hutchinson, 1987). For example, Aurier and N'Gobo (1999) identify three *a priori* « novice » attributes - colour, price and bottle design – and seven *a priori* “expert” attributes -AOC, region of production, estate name, “Bottled at the estate”, year, “Aged in oak barrel” and perceived quality. This leads us to hypothesis H2:

H2. Consumers with a higher SK level and consumers with a lower SK level do not consider the same product attributes as important in their buying decision.

The order in which the attributes are considered differs between expert consumers and novice consumers. Indeed, according to a European study, experts first consider the origin (region of production) then the combined brand*region effect whilst novices favour price and then the region - (Perrouy *et al.*, 2004). We can therefore formulate hypothesis H3:

H3. Consumers with a higher SK level and consumers with a lower SK level do not use product attributes in the same order during the buying process.

Effects of subjective knowledge on the consideration set

The impact of SK on the CS has already been studied (Aurier *et al.*, 2000; Johnson and Lehmann, 1997). Previous research has focused principally on the size of the CS (Alba and Hutchinson, 1987, 2000; Johnson and Lehmann, 1997; Punj, 1989; Wirtz and Mattila, 2003). Some of these studies validate the existence of a link between the consumer's experience and the size of the CS. As the knowledge of the product improves, the consumer considers a higher number of alternatives (Aurier *et al.*, 2000), which leads us to hypothesis H4:

H4. The size of the CS is bigger for consumers with a higher SK level than for consumers with a lower SK level.

The variety of the CS or “how distinct products within the set are” is influenced by memorization and particularly by the way in which the consumer categorizes the product in his/her mind (Desay and Hoyer, 2000). While for a classical product the categorization is very often organized around brands, this pattern appears less appropriate to explain the categorization of wines in the minds of French consumers (Viot and Passebois, 2010). For the latter, it seems that geographical origin serves as the basis for categorizing wines. The “region of production” geographical criterion is considered the most important attribute for a majority of French consumers (d'Hauteville and Sirieix, 2007). In this market, the *appellation* plays the role of the brand (Viot and Passebois, 2010). The importance given to the origin is not specific to France. Spanish consumers have developed a genuine involvement for *appellations*

in the same way as they would for a brand (Rodriguez-Santos *et al.*, 2006). American consumers also use geographical indications – country and region – as an indicator of quality, but the *appellation* appears secondary (Atkin and Johnson, 2010). This is the reason why we propose to study the impact of SK on the variety of the CS, taking into account the origin of the wine, leading us to hypothesis H5:

H5. The content of the CS, in terms of structure and variety, is influenced by SK:

Consumption occasions, subjective knowledge and perceived risk

The purchase of wine can be considered as a risky purchase because of the diversity of the product offering. It has been shown that in a food consumption context, SK influences the perceived risk (Deon and Sweeney, 2007). Several scholars suggest that the level of perceived risk varies according to the consumption occasions (Aurier *et al.*, 2000; Quester and Smart, 1999). We therefore formulate hypothesis H6:

H6. Consumers with a lower SK level perceive a higher risk than that of consumers with a higher SK level across all wine consumption occasions.

In the case of high perceived risk, the consumer displays a preference for the norm or for a product which is familiar to him/her (Campbell and Goodstein, 2001). Evaluation of products is based on the discrepancy between product attributes and consumers' expectations for this type of product. Under high-risk conditions, congruent products are preferred to the moderately incongruent products. Campbell and Goodstein (2001) describe this behavior as the consumers' preferences for the norm, which in the context of wine can result in a propensity to choose certain AOC or certain regions benefiting from a good reputation. In accordance with Popper's refutability principle (Popper, 1979), we will not formulate a hypothesis in the strict sense of the term but rather a research proposition, given that the content of the CS will be studied through a qualitative content analysis which makes the refutation of this allegation difficult.

P7. The perceived risk associated with each consumption occasion influences the variety of the CS.

Figure I Research model and hypothesis

3. Methodology

The data were collected from a convenience general population sample comprising French consumers aged from 19 to 87 years (n=300; average age =40.7 years). The respondents (52 % men) had made at least one purchase during the last three months. The questionnaire was completed face to face. 287 correctly-completed questionnaires were analyzed. This sample is comparable in terms of size and characteristics to those used in numerous recent wine marketing researches (Agnoli *et al.*, 2011; Concha *et al.*, 2010; Espejel and Fardos, 2009; Latour and Latour, 2010; Orth *et al.*, 2010; St James and Christodoulidou, 2011; Veale and Quester, 2009, etc.).

In the first part of the questionnaire, focusing on the choice of the wine, the respondents had to recall the circumstances of their last purchase: specify its purpose choosing from six propositions and indicate the importance given to 30 attributes describing the wine.

The consumption occasions were determined from the literature (Aurier *et al.*, 2000; Aurifeille *et al.*, 1999; Quester and Smart, 1998; Rodriguez-Santos *et al.*, 2006). Based upon this literature, six *scenarii* were developed (the percentages between brackets indicate the frequencies observed in our sample).

S1. For a gift (13.6).

S2. For a festive meal, a special event (Christmas, birthday, Valentine's day etc.) (7.3).

- S3. For a meal at home with friends (35.9).
- S4. For a meal at friends' home (13.9).
- S5. For your usual consumption (24.4).
- S6. For a barbecue with friends (1.7).

These situations cover 96.8 % of the circumstances of the last purchase. They are therefore realistic *scenarii*. The data collection period – end October/ beginning November – was not very promising for barbecues which explains the low frequency.

The importance given to each attribute is evaluated on a scale from 1 (no importance) to 4 (very important). The respondents were invited to answer according to the last wine purchase they made. A list of 30 attributes (Appendix I) was drawn up based upon previous research (Aurier and N'Gobo, 1999; d'Hauteville and Sirieix, 2007; Orth and Krska, 2001; Quester and Smart, 1998; Verdu-Jover *et al.*, 2004) and from a pilot study carried out with 35 consumers and professionals.

The respondents then had to indicate in which order they used the three attributes considered as indispensable during the last purchase. This type of measurement has already been used by Aurier and N'Gobo (1999).

The respondents had to evaluate the perceived risk associated with each consumption occasion. To measure this dimension of risk, *ad hoc* mono-item scales are generally used (Celhay, 2011; Celhay and Passebois, 2011) whereas multi-items scales were developed to measure the risk associated with the purchase of a product (Stone and Gronhaug, 1993). In line with this literature, the level of risk associated with consumption occasions is measured on a mono item-scale developed specifically for the study: "what is the level of risk that you associate with this purchase?" (from 1 = weak to 4 = strong).

The second part of the questionnaire focused on the CS. In this study, the CS is characterized by two dimensions: the variety and the size. Regarding the variety (structure and content of the CS), the respondents had first to indicate which wine from three possible wine origins (Bordeaux wines/wines from another French region/foreign wines) they considered buying for each of the *scenarii* given. Multiple answers were allowed: for a given situation, respondents could consider to choose a Bordeaux wine but also a wine from another French region and a foreign wine. Next, the subjects had to indicate precisely, for each origin chosen, one or several wines they considered buying. The answer format for this question was free so that respondents could indicate exact regions, brand names, AOC, colors, countries... They were not limited in length (Appendix II). For a given consumer, the size of the CS was measured by the number of wines (s)he proposed to buy. An average was calculated distinguishing expert consumers from novice consumers for each choice occasion.

The third part of the questionnaire concerned the profile of the respondent in socio-demographic terms and in terms of SK. Respondents expressed their knowledge through four items reflecting a general feeling of knowledge, expertise in comparison to others and familiarity with wine. This four-item scale is inspired from Flynn and Goldsmith's scale (1999), a five-item scale consisting of both positively and negatively worded items that was found to be a valid and reliable measure of SK across a range of product categories. The French adaptation of this scale (Korchia, 2004), had already been used to measure wine SK (Viot and Passebois, 2010). A Principal Components Analysis confirms the unidimensionality of SK (Appendix III).

An average score, calculated from these four items, enabled the level of SK to be determined and the expert and novice consumers to be identified. The average level of SK is 2.498 out of 4 with a standard deviation of .6. Three groups of consumers were established. The first group brings together the 93 expert consumers with a level of SK higher than 2.8 (average + ½ standard deviation). An expert population of approximately one third of the sample could seem to be large but this large proportion can be explained by the use of a subjective measure

of knowledge. Respondents could see themselves as more knowledgeable than they actually are. The second group comprises the 87 novice consumers whose knowledge level is below 2.2 (average – ½ standard deviation). Finally, the third group is composed of consumers with a moderate level of knowledge (n=112). This moderate group is often overlooked in studies as people in this segment don't show a lot of differences. For this reason, respondents whose level of SK was close to the average (2.498) and/or to the median (2.5) were excluded from analyses.

4 Results

Effects of subjective knowledge on the attributes

For the novice consumers, only two attributes out of the 30 were considered as somewhat important or very important. They were the price and the vintage. For the experts, seven attributes were considered as somewhat or very important (vintage, region, *terroir*, age, AOC, “Bottled at the estate/at the château”, country of origin, medals/awards, château name and price. The number of attributes considered as important by the expert consumers is higher than for the novices (Table I). As such, hypothesis H1 can be considered as validated.

Table I Influence of subjective knowledge on attributes importance*

Subjective knowledge		Attribute	Importance	SD**		
Low level	Most important (somewhat important or very important)	Price	3.34	.819		
		Vintage	3.07	.900		
	Less important (somewhat not important or not important at all)	Alcoholic content	1.92	.991		
		Opinion of the press	1.85	.888		
		<i>Vin de pays</i>	1.74	.842		
		Organic wine	1.72	.911		
		Environmentally-friendly wine	1.61	.768		
		Wine merchant name	1.60	.799		
		High level	Most important (somewhat important or very important)	Vintage	3.68	.593
				Region of production, <i>terroir</i>	3.64	.604
Age	3.62			.569		
AOC	3.44			.800		
Bottled at the estate/ at the <i>château</i>	3.42			.864		
Country of origin	3.31			.921		
Official rankings	3.17			.974		
Château name	3.15			.977		
Price	3.12		.924			
Less important (somewhat not important or not important at all)	Alcoholic content		1.92	.986		
	Environmentally-friendly	1.85	.960			
	Shape and design of bottle	1.81	.958			
	Wine merchant name	1.78	.858			
	Organic wine	1.65	.870			

* The evaluation of the 30 attributes is reported in Appendix I, **SD=Standard deviation

A comparison test shows that the differences between knowledgeable consumers and novice consumers are statistically significant for 17 attributes out of 30 (Appendix I). Among these 17 attributes, 13 are considered more important by the expert consumers and four are considered more important by the novice consumers (Table II).

Table II Attributes considered as more important by knowledgeable consumers (in red) and by novice consumers (in blue)

	Subjective knowledge	N	Mean	S. D.	MD	T
1. Château name	Low level	87	2,79	,942	- 0.36	- 2.495*
	High level	93	3,15	,977		
2. Grape variety	Low level	87	2,28	,872	- 0.68	- 4.829***
	High level	93	2,96	1,010		
3. "Bottled at the estate/a the château"	Low level	87	2,64	,940	-0.78	- 5.77***
	High level	93	3,42	,864		
4. AOC	Low level	87	2,80	,950	- 0.64	- 4.869***
	High level	93	3,44	,800		
8. Colour	Low level	87	2,64	1,023	- 0.31	- 2.020*
	High level	92	2,96	1,047		
9. Country of origin	Low level	87	2,98	,792	- 0.33	- 2.608**
	High level	93	3,31	,921		
12. Official rankings	Low level	87	2,61	,867	- 0.56	- 4.084***
	High level	93	3,17	,974		
13. Region of production, <i>Terroir</i>	Low level	87	2,89	,920	- 0.76	- 6.534***
	High level	92	3,64	,604		
17. Vintage	Low level	87	3,07	,900	- 0.61	-5.391***
	High level	93	3,68	,593		
20. Type of cork or cap	Low level	87	2,32	1,084	- 0.42	- 2.463*
	High level	93	2,74	1,197		
28. Age	Low level	87	2,99	,921	- 0.64	- 5.603***
	High level	93	3,62	,569		
29. "Winegrower"	Low level	87	2,13	,962	- 0.75	- 4.884***
	High level	93	2,88	1,102		
30. "Aged in oak barrels"	Low level	87	2,33	,960	- 0.63	- 4.047***
	High level	92	2,97	1,124		
10 Promotions	Low level	87	2,39	1,093	0.35	2.100*
	High level	92	2,04	1,118		
16 Shape and design of bottle	Low level	87	2,47	,963	0.69	5.057***
	High level	93	1,78	,858		
25. General look of the bottle	Low level	87	2,63	,941	0.41	2.975**
	High level	92	2,22	,924		
27. Information on the label and back-label	Low level	87	2,34	,986	0.30	2.038*
	High level	93	2,04	,999		

SD = Standard Deviation; MD = Mean Difference; * p<0.05; **p<0.01; ***p<0.001

As such, hypothesis H2 can be considered as validated. The importance given to the attributes differs between consumers with a high level of SK and those with a low level even though it does not concern all the attributes. In order to check for a possible effect of the choice occasion on the importance given to the attributes, a one-way Manova was carried out. The observations corresponding to the barbecue with friends were excluded from the analysis because of their low number. The results show the absence of effect of the consumption occasion on the importance given to the attributes ($p > .05$).

After having evaluated the importance of each attribute, the respondents had to rank the three attributes considered indispensable during the last purchase. The three essential criteria are markedly different for the experts and the novices. (Table III). Only the indication concerning the vintage appears to show similarity. This attribute is ranked second for both sorts of consumers. While the price is foremost in the buying decision of the novices, the expert consumers consider first the attributes giving information on the origin (château, region of production). A Mann-Whitney test confirms that at least one of the attributes which feature in Table III is ranked differently by the experts and the novices. It is the price, whose rank is higher for the novices than for the experts ($Z = -2.307$, $p < .05$). As such, hypothesis H3 can be considered as validated

Table III Influence of subjective knowledge on attributes ranking

	Low subjective knowledge (n = 87)	High subjective knowledge (n = 93)
*1 st attribute	Price (23 %) Château name (18.4)	Château name (19.6 %) Region of production, terroir (18.5)
2 ^d attribute	Vintage (19.5 %) Price (11.5)	Vintage (26,1 %) Château name (14.1)
3 rd attribute	Price (17.2 %) Château name (13.8)	Vintage (21.7 %) Price (20.7)

The number in brackets indicates the percentage of respondents having ranked this attribute first, second or third. The non bolded attribute in each line represents the attribute ranked as first, second or third attribute by a less important percentage of respondents. For example, when they have to classify only three attributes which they consider as indispensable during a purchase process, 23% of the consumers whose level of knowledge is low, rank the price as the first attribute, while for 18.4% of them, the Château name is the first attribute. In the same way, 19.5% of them rank the vintage as the second attribute, while for 11.5 % this is the price. And finally, for 17.2% of novice consumers, the price is ranked as the third attribute whereas for 13.8% of them, this is the Château name.

Although no hypothesis has been formulated on this subject, we then checked if a higher degree of importance given to an attribute of wine means that this attribute is considered as a priority during a buying process. It appears that this is not systematically the case (Table IV).

Table IV Attributes importance and ranking

	Most important	Importance (1 to 4)	Expected rank	Rank (1 to 3)
Expert consumers	Vintage	3.68	1	2
	Region of production	3.64	2	1*
	Age	3.62	3	-
Novices consumers	Price	3.34	1	1
	Vintage	3.07	2	2
	Age	2.99	3	-

* 18.5 % of experts consider region of production as the first attribute (table III).

While for the expert consumers the vintage is the attribute considered as the most important (with a score of 3.68/4), it only ranks second in the choice sequence based on three attributes. The age of the wine does not appear in this sequence of three attributes although it is considered as the third most important attribute (3.62/4). Moreover, the château name, ranked first in the sequence of three attributes, is the 8th attribute in terms of importance. For the novice consumers, it seems that the order reflects more the importance of the attributes. This is the case for the price and the vintage.

Effects of subjective knowledge on the consideration set

For this part of the analysis, five *scenarii* out of the six originally proposed, have been retained (S1, S2, S4, S5 and S6). Only one *scenario* concerning a meal with friends is maintained. The respondents had to answer for all five *scenarii*, in contrast to the previous analyses.

Consideration set size. The products evoked by each consumer were counted in order to define the average size of the CS. This analysis was made scenario by scenario. Then the average number of products in the CS was used to make a comparison between the expert consumers and the novices (Table V).

Table V Consideration set size

You buy wine...	SK	CS size	SD	t-test
S1. For a gift.	High level	0.79	0.764	-2.038*
	Low level	1.01	1.010	
S2. For a festive meal, a special event.	High level	1.528	1.22	-1.595ns
	Low level	1.817	1.21	
S4. For a meal at friends' home.	High level	1.609	1.22	-3,30**
	Low level	2.258	1.398	
S5. For your usual consumption.	High level	1.275	1.26	-3.077**
	Low level	1.860	1.28	
S6. For a barbecue with friends.	High level	1.114	1.25	-2.283*
	Low level	1.505	1.038	

N expert consumers = 93, N novice consumers = 87; dof = 178; SK = subjective knowledge; CS = consideration set; SD = standard deviation; * p<0.05; **p<0.01.

The CS size (2.258 products at most for consumers with a higher level of SK) is relatively low compared to other products (from 1.3 for toothpastes to 5.4 for soft drinks, Roberts; 1989). The differences in size are always as expected: the CS of the expert consumers is higher than that of the novice consumers. A t-test shows that these differences are significant for four *scenarii* out of five. The size of the CS does not differ in a significant way between consumers with a high level of SK and those with a low level of SK when it is a question of buying a bottle of wine for a festive meal or other special occasion. Hypothesis H4 can therefore be considered as supported.

Variety of the CS. Bordeaux wines are overwhelmingly popular in *scenarii* S1, S2 and S4 for both the expert consumers and the novices (Table VI). For *scenario* S5 (usual consumption), the expert consumers have a lower propensity than the novices for choosing a Bordeaux wine even if Bordeaux is their first choice. For *scenario* S6, the experts very heavily favour wines from another region of France (Figure II). The differences are not as marked as we would have expected. The choice between wines from Bordeaux, from other regions and foreign wines does not seem to be influenced by the level of SK, except for *scenario* S6.

Figure II Consideration set content

In order to refine this analysis, a comparison test of proportions was carried out. Differences in proportion between the experts and the novices having chosen a wine from Bordeaux, another French wine or a foreign one are in fact rarely significant (Table VI).

Table VI Comparison test of proportions

	Origin of wine	Low SK (per cent)	High SK (per cent)	Z- test
Scenario 1	Bordeaux wines	.80	.91	2.107*
	Other French wines	.39	.40	0.137
	Foreign wines	.33	.17	- 2.332*
Scenario 2	Bordeaux wines	.85	.90	1.017
	Other French wines	.48	.48	0
	Foreign wines	.23	.18	- 0.832
Scenario 4	Bordeaux wines	.87	.88	0.203
	Other French wines	.47	.66	2.572*
	Foreign wines	.28	.33	0.727
Scenario 5	Bordeaux wines	.67	.80	1.980*
	Other French wines	.48	.65	2.231*
	Foreign wines	.21	.31	1.667
Scenario 6	Bordeaux wines	.54	.53	- 0.134
	Other French wines	.51	.65	1.494
	Foreign wines	.39	.33	1.118

* $p < .05$

Only five differences out of the 15 are statistically significant ($p < .05$). The effect of SK on the structure of the CS is more marked for *scenarii* S1 (purchase of a wine for a gift) and S5 (purchase for usual consumption). Hypothesis H5, postulating that the content of the CS, in terms of structure and variety, varies according to SK cannot be considered as validated.

In order to complete these results, a thematic content analysis was carried out. In total, the 87 novices and 93 experts made 1456 statements. These were classified into the following categories: *AOC* - regions, châteaux names, countries and brands. These categories enable 96% of the statements to be classified. The *AOC* and the regional *appellations* are the most frequent (72 %), far ahead of the countries for the foreign wines (16 %), the châteaux (5 %), the brands (3 %) and miscellaneous statements covering essentially grape varieties and the colour of the wine (Figure III)

Figure III Breakdown of statements

It can also be highlighted that the expert consumers mentioned *AOC*, countries and châteaux names more than the novice while, for brands, the novices' statements are nearly equal to those of the expert consumers.

Figure IV Breakdown of statements according to the level of subjective knowledge

It appears that the variety of the CS differs according to SK (except for brands).

Effects of subjective knowledge on the perceived risk

Hypothesis H6 postulates that the novices' level of perceived risk is higher than that of the expert consumers. Although the average level of risk perceived by the novices is indeed higher than that of the expert consumers, for each of the five *scenarii*, a t-test shows that this difference is statistically significant for only one *scenario*: the purchase of a wine for a gift (S1), (Table VII)

Table VII Effects of subjective knowledge on the perceived risk

	SK	N	Perceived Risk	SD	SEM	T	Df
Scenario 1	Low	87	2.22	.895	.096	2.55*	178
	High	93	1.86	.985	.102		
Scenario 2	Low	87	1.99	.883	.095	1.47ns	178
	High	93	1.77	1.054	.109		
Scenario 4	Low	87	1.90	.778	.083	1.19ns	178
	High	93	1.75	.843	.087		
Scenario 5	Low	86 ¹	1.65	.794	.086	.54ns	177
	High	93	1.59	.679	.070		
Scenario 6	Low	87	1.89	.920	.099	1.52ns	178
	High	93	1.70	.719	.075		

SK = subjective knowledge; SEM = standard error mean; Df = Degrees of freedom; * p<0.05.

1. N = 86 because of missing data.

Therefore, the level of SK does not have an effect on the perceived risk associated with each scenario; hypothesis H6 cannot be validated. This counterintuitive result is discussed further.

In order to check if the level of perceived risk influences the content of the CS, a preliminary analysis is necessary. A one way Anova and a *post hoc* multiple comparisons of averages test were carried out in order to check if the average level of risk associated with each consumption occasion differs from each other, without distinguishing between expert consumers and novices, since the previous test suggests there is no justification in making a distinction. The perceived risk differs in fact according to the *scenario* (Table VIII). The Levene test confirms the homogeneity of the variances hypothesis (Levene = 3.563; $p < .01$) and the inter-group variance is statistically significant ($F = 5.761$; $p < .001$).

Table VIII Perceived risk

Scenario	N	Perceived risk	SD	SE
Scenario 1	178 ¹	2.04	.956	.072
Scenario 2	179 ²	1.88	.979	.073
Scenario 4	180	1.82	.813	.061
Scenario 5	178	1.62	.736	.055
Scenario 6	178	1.76	.796	.060

SD = standard deviation; SE = standard error.

1. N=178 because of missing data. 2. N=179 because of missing data

The F-test is significant but additional exploration of the differences among means is needed to provide specific information on which means are significantly different from each other. In the case of a small number of experimental groups, the Bonferroni's test turns out interesting because it limits the increase of the α risk due to the multiplication of pair-wise comparisons. According to the Bonferroni's test, the differences between S1 and S2, S1 and S6, S1 and S5 and finally S2 and S5 are significant (Table IX). Given these results, the consumption occasions can thereby be classified from the least risky to the most risky: purchase for one's usual consumption S5 < purchase for a barbecue with friends S6 < purchase for a festive meal or other special event S2 < purchase for a gift S1. Thus, choosing a wine for a gift is perceived as the most risky situation. A purchase for a meal with friends has not been retained for the following analyses since the differences of perceived risk with the other consumption occasions are never significant.

Table IX Bonferroni's *post hoc* test*

Scenario (I)	Scenario (J)	Average difference (I-J)	P value
Scenario S5	Scenario S2	-.259*	,046
	Scenario S1	-.421***	,000
Scenario S6	Scenario S1	.281*	,022

* Only significant differences are reported.

The analysis of the content was then continued in order to display the elements which are favourable to the P7 research proposition which postulates that the perceived risk has an effect on the content of the CS. For this phase, we have only retained the four scenarios presenting the levels of risk perceived as different (S1, S2, S5 and S6). The objective of this analysis is to check whether certain AOC-regions, brands or countries are more closely associated with certain levels of perceived risk. For this analysis, we do not draw a distinction between the expert consumers and the novice consumers because they perceive relatively close risk levels. The analysis of the content effectively enables us to identify specific wines according to the risk associated with the consumption occasions (Appendix IV).

For the high risks, (S1 and S2), the prestigious AOC Bordeaux wines are frequently mentioned (Saint Emilion, Sauternes, Pomerol) as well as other prestigious wine regions in France (wines from Burgundy or Champagne). Certain very prestigious châteaux (Château Margaux, for example) are also mentioned. Among foreign wines, we can note the presence of prestigious brand names such as Opus One (California), considered by the professional French experts as being worthy of comparison with the great Bordeaux wines.

For the consumption occasions perceived as less risky (S5 and S6), the less prestigious AOC are considered (Bordeaux and Bordeaux Supérieurs, Côtes de Bordeaux). Other regions of France are also favoured: Loire and Provence for rosé wines, and Côtes du Rhône for red wines. A few brand names are equally associated with these consumption occasions. Some are French (Baron de Lestac, Claret de Quinsac), others are foreign such as Marques de Caseres (Spain).

Finally, certain wines seem to be appropriate, whatever the level of perceived risk. These are Médoc and Pessac-Léognan AOC wines, wines from Alsace, branded wines (Tariquet, for example which is a very fruity white wine produced in the Armagnac region) and most foreign wines. Indeed, we can underline the fact that if French consumers seem to be more open to foreign wines, they do not make a marked distinction according to the consumption occasions. Spanish wines and particularly those from the Rioja region, wines from Italy, from South America (Argentina and Chile) and from Australia are considered whatever the level of perceived risk.

5. Discussion and conclusion

Discussion of results

The expert consumers consider a higher number of attributes as important compared to the novices. This result is confirmed in the literature. Aurier and N'Gobo (1999) had, for example, identified three *a priori* novice attributes against seven *a priori* expert attributes.

The most important attributes are not the same for the experts and the novices. The attributes which are specific to expert consumers are, in decreasing order of importance, the vintage, the region, the *terroir*, the age, the AOC, the wording "Bottled at the estate/at the château", the country of origin, the official rankings, the *château* name and the price, while for novices, they are the price and the vintage. These results confirm in part the previous literature. According to Aurier and N'Gobo (1999), the expert consumers give importance to the

following attributes: *AOC*, region of production, estate name, “Bottled at the estate”, vintage, “Aged in oak barrels” and perceived quality. There is therefore a certain conformity. For the novice consumers on the other hand, our results show that they favour above all the price and the vintage while according to Aurier and N’Gobo (1999), they give importance to the colour, the price and the design of the bottle. More recent researches show that consumers, whether novice or not, show a preference for wines with classic packaging (Campbell and Goldstein, 2001; Celhay and Passebois, 2011). During the last decade, numerous wines with an innovative packaging were launched on the French market. These bad experiences can explain distrust towards this type of packaging and, as an indirect result, a lesser importance attached to this attribute.

When comparing the attributes where the importance diverges, to a significant extent, it can be noted that the novice consumers attach more importance to the physical and promotional criteria than the expert consumers while the expert consumers attach more value to the origin of the wine and the conditions in which it has been matured than the novices do. The fact that the expert consumers give more importance to the colour than the novices goes against the conclusions made by Aurier and N’Gobo (1999). Although there is no evidence of this, it could be suggested that the term “colour” without further explanation could have been interpreted differently by the novice consumers (white, red, rosé) and by the expert consumers who perhaps perceived this attribute as the “hue” of the wine (from vermilion red to dark violet for the red wines and from straw yellow to lemon going for the whites).

In the middle of the 2000s decade, varietal wines and branded wines were presented as possible solutions to attract young French consumers considered as novices. However, the grape variety and the brand name do not feature among the important attributes (importance of 2.28/4 and 2.32/4). Moreover, the grape variety and brand name are considered more important for the expert consumers (2.96/4 and 2.41/4). This result contradicts the generally accepted idea according to which grape variety wines are appreciated by the novice consumers. The consumption of varietal wines increases regularly in France (+ 12 % in volume compare to 2009) and they represent 17 % of sales in volume (12 % in value)³. But this success is partially due to their low price (an average price of 2.51 €/bottle, against 3.66 in general).

Consumers with a high or low level of SK seem to agree on the least important attributes: information relating to eco-friendly wines: organic wine and environmentally-friendly wine (Appendix I). We must not come to a hasty conclusion regarding the lack of enthusiasm that the French have for this type of wine. The French have long considered wine as a natural product. However, some recent studies highlighting the presence of traces of pesticides and fertilizers in wine have somewhat undermined these convictions. In 2009, 67 % of French consumers agree with the idea that traces of pesticides, fertilizers and fungicides can be found in the wine they consume (against 41 % in 1998)⁴.

When respondents indicate in which order they use the three attributes considered as indispensable during the last purchase, this order differs between the expert consumers (*château* name, vintage and price) and novices (price, vintage and *château* name). This result corroborates and completes Perrouy’s European study concluding that, the expert consumers use 1) a combination of the brand*region attributes, 2) the region, 3) the name of bottler, 4) the price and 5) a combination of the region*price attributes... whereas novice consumers use 1) the price, 2) the region, 3) the name of bottler, 4) a combination of the region*grape variety attributes and 5) the brand name (Perrouy *et al.*, 2004). According to our results, the vintage that wasn’t included in Perrouy’s study seems to be an important choice attribute.

³ France Agrimer, Infos No 171, December 2010

⁴ Viniflor Infos, Issue 160, February. 2009

The results appear to contradict the existence of a perfect correspondence between importance and order of attributes, in particular for the expert consumers. To our knowledge, the relationship between importance and order of use of the attributes has been studied little in the literature (Heeler *et al.*, 1979). It seems, however, to present an interest from a methodological point of view: can we solely measure the importance that the consumer associates with each attribute in a buying process, or should we also take account of the order in which the attributes are considered in the decision-making process? Our results show the interest of launching new investigations with research methods allowing the recording of choice sequences. Some methods are well suited:

- the protocols method where the respondent is invited to describe, aloud, his/her reasoning while (s)he chooses a product;
- information display board (IDB) method, developed to examine the depth, content, and sequence of information acquired by consumers in making a marketplace choice.

With IDB method, subjects choose information piece by piece from an attribute by product matrix board until they have acquired enough information to make a product selection. The complete information acquisition behavior of the subject can be followed through the IDB. "In addition, the instrument has the advantage of allowing subjects to choose for themselves the attributes warranting attention", (Heeler *et al.*, 1979). This method is now rejuvenated thanks to Internet (Petr and Hess-Miglioretti, 2010).

The size of the experts' CS is bigger than the novices'. This result confirms those already observed in the literature (Aurier *et al.*, 2000). On the other hand, SK has a very slight influence on the structure of the CS. Only scenario S6 shows a very different structure. In this situation, the expert consumers favour wine from another region while the novices prefer Bordeaux.

The weight of the AOC and the regions (72 % of the statements) suggest that the knowledge of wine is based upon a categorization according to the origin and not the brand (3 % of the statements). This result corresponds to the literature (Viot and Passebois, 2010). The brands and the grape varieties have a low presence in the CS both for the expert consumers and the novices, which is coherent with the fact that these attributes are not among the most important ones.

The level of SK does not have an effect on the risk associated with each scenario, especially as the level of perceived risk is low. For the five *scenarii*, the level of risk is perceived as low or moderate. This result is not apparently due to the choice of *scenarii* since a one way Anova showed that the level of perceived risk differs, except for the purchase of a wine for a meal with friends (Table VII). A possible explanation is the low variance within the sample in terms of SK.

For the most risky situations, the consumer falls back on certain regions of production (Bordeaux, Burgundy and Champagne) or certain renowned AOC (Saint Emilion, Médoc and Pomerol). The consumers' trust is therefore principally founded on the region or the AOC, which conforms to the literature (Sirieix and Morot, 2001). They consider that they provide an adequate guarantee. That can also be explained by what Campbell and Goodstein (2001) describe as the consumers' preferences for the norm. Certain AOC appear to constitute a reference and play the role of the typical product for certain consumption occasions (Côtes de Provence for the barbecue, Saint Emilion as a gift or for a festive meal etc.). However, caution is needed since certain wines which were mentioned are sold at very high prices (Château Mouton Rothschild, Petrus and Château Margaux, for example whose prices vary between 300 and 3,500 €, according to the vintage). In real situations, the choice can turn out to be different. Some wines appear to be appropriate for all circumstances. This is notably the case for certain foreign wines: wines from Rioja (Spain), Italy, South America (Argentina and Chile) and Australia as well as for branded wines which are easy to drink (Tariquet) and

certain AOC (Médoc, Pessac Léognan and Alsace). For foreign wines, this can be due to the lower knowledge of these wines which can be favoured because of their “exotic” character.

Managerial implications

From the managerial point of view, this study shows that the visual attributes such as the design and the packaging are not sufficient to sell wine to French consumers, even if they are novices in this field. For the expert consumers, information relating to the origin of the wine and the year of production must be very visible because certain regions of production play the role of a brand and this regional identity can be considered as a place-based equity (Orth *et al.*, 2005). For the novice consumers, the price policy must be adapted to the positioning and to the target so as to avoid an underestimation or an overestimation of the quality and/or the value associated with the wine. The vintage is an attribute considered important by both the novices and the experts. Certain vintages are considered as mythical in the wine world, like 2005 and 2009 for example, and that is sufficient to reassure the consumer: the expert – since (s)he has a precise knowledge of the good vintages according to the regions of production and even the AOC – and the novice because (s)he has the tendency to assume that an exceptional year concerns all the wine-producing regions or all the AOC of a region.

Our results show that the grape variety is not considered as an important attribute, above all by the French novice consumer. The restrictive French legislation could explain the slightest interest of the novice consumers for this attribute⁵. Given that the indication of varieties on the label is now authorized for a largest number of wines, this attribute could become more familiar to the novice consumer. A winning strategy for wine producers or wine merchants could consist in associating varietal wines (VW) with IGP (*Indication d'origine protégée*), particularly for rosé wines. Indeed, rosé wines are the only ones whose sales progress in France both in value (+ 9.2 %) and in volume (+ 6.5 %)⁶. Another winning strategy is to sell VW in Bag-in-box. The sales of boxed VW with IGP rose by 12 % while they slightly decreased for bottled VW (-1.1 %).

A brand name does not guarantee success either. Several launchings of brands which went against the traditional codes in terms of packaging and communication turned out to be failures. The brands which have succeeded on the French market favour traditional packaging (Mouton Cadet, Baron de Lestac, Tariquet). The professionals therefore have an interest in not straying far from prototypical graphical codes to attract French consumers. This remark does not necessarily hold good for foreign producers who wish to sell their wine in France, since these wines and their more unconventional packaging are today more familiar to consumers.

Finally, our results suggest that to help the consumer in his/her choice, it can be useful to associate a given wine with one or several consumption occasions. Communication on wine in France is very carefully controlled and the labels carry a large quantity of legally-required information. New technologies associated with smartphones constitute first-class supports for this type of information. Several projects aim to create data bases which, from a photo taken with a mobile phone, enable the consumer to access a data base and find out more information if (s)he wishes (SmartBordeaux, for example). These data bases can be seen as an extension of the packaging. It is also through this support that the customer could obtain extra information on the production methods – conventional vs. environmentally friendly – and the conditions in which the wine has been matured.

⁵ Before the European reform of *Appellations*, the indication of the name of varieties on the label was authorized only for the category of Vins de Pays. This category is now replaced by IGP wines, a new intermediate category, between wines without IGP (renamed Vins de France) for which the indication of varieties is also authorized, and AOC wines for which the indication of varieties is forbidden.

⁶ France Agrimer, Infos No 171, December 2010 (comparison 2009/2010).

The difference between attribute importance and order in the decision making process is also interesting from the point of view of practitioners. They have to take this into account to determine which attributes require more visibility on the packaging (label, back label...) or on the web site, when the wine is sold on Internet.

Limits and lines of research

This study is not without its limits which as such represent paths to be explored. Firstly, a scenario does not exactly recreate real buying conditions. This objective could be reached with a more elaborate experimental design. The respondent could make his/her choice from pre-defined basket of wines for which (s)he would have detailed information and a photograph. The results of the present study concerning the structure, the size and the composition of the CS could serve as a basis for the development of this experimental design. We could also imagine a study carried out in a virtual wine shelf display where the participants would be assigned a particular task as, for example, to choose a wine for a meal with friends. Only this type of experimentation would enable us to check a correspondence between declared information – the attributes which are considered important – and the real choice.

Secondly, this study is based on declared information. An evaluation on a scale of importance can turn out to be artificial and perceived as an “endless task”. In making market place choice, consumers would probably not have thought about all the attributes. It would be interesting to compare our results with those obtained by other methods, notably the protocols method, the information display board (IDB) method, and/or the best-worst method (Cohen, 2009). The IDB method was shown to yield a measure of greater face validity than conjoint measurement and self-report (Heeler *et al.*, 1979). This remark also holds for the ranking of the three first attributes. Trade-off methods could eliminate a certain number of distortions. Moreover, the respondents were asked to rank only three attributes. It was not feasible to ask them for an exhaustive ranking of the 30 attributes of the study, but perhaps three is not enough.

Another limitation of this research is the use of a four-point scale to measure the importance of the 30 attributes. The measurement level for the discrimination required could not be sufficient and could explain that ANOVA calculated on that data are not valid.

The qualitative or nominal nature of certain data does not allow to employ statistical methods eliminating the bias due to replicated measures over several consumption occasions (data for H5, for example).

Finally, it would have been interesting to analyze the middle group regarding SK. They are nevertheless an important segment even if there were not any differences with the others. Alternative methods like best-worst, protocols and trade-off are well suited to generalize comparisons between the three segments of consumers.

References

- Aaron, J.I. Mela, D.J. and Evans, R.E. (1994), “The influence of attitudes, beliefs and label information on perceptions of reduced-fat spread, *Appetite*, Vol 22 No 1, pp. 25-37.
- Agnoli, L., Begalli, D. and Capitello, R. (2011), “Generation Y's perception of wine and consumption situations in a traditional wine-producing region, *International Journal of Wine Business Research*, Vol 23 No 2, pp. 176-192.
- Alba, J.W. and Hutchinson, J.W. (1987), “Dimensions of Consumer Expertise”, *Journal of Consumer Research*, Vol 13 No 4, pp. 411-454.
- Alba, J.W. and Huchinson, J.W. (2000), “Knowledge calibration: What consumers know and what they think they know”, *Journal of Consumer Research*, Vol 27 No 2, pp. 123-155.

- Aqueveque, C. (2006), "Extrinsic cues and perceived risk: the influence of consumption situation", *Journal of Consumer Marketing*, Vol 23 No 4/5, pp. 237-247.
- Atkin, T. and Johnson, R. (2010), "Appellation as an indicator of quality", *International Journal of Wine Business Research*, Vol. 22 No 1, pp. 42-61.
- Aurifeille, J.M., Quester, P.G., Hall, J. and Lockshin, L. (1999), "Investigating situational effects in wine consumption: a means-end approach", *European Advances in Consumer Research*, Vol 4, pp. 104-111.
- Aurier, P., Jean S. and Zaichowsky, J. (2000), "Consideration set size and familiarity with usage context", in S.J. Hoch and R.J. Meyer (Eds.), Provo, UT, *Advances in Consumer Research*, Association for Consumer Research, Vol 27, pp. 307-313.
- Aurier, P. and N'Gobo, P. (1999), "Assessment of Consumer Knowledge and its Consequences: A Multi-Component Approach", in E.J. Arnould and L.M. Scott (Eds.), Provo, UT, *Advances in Consumer Research*, Association for Consumer Research, Vol 26, pp. 569-575.
- Barsalou, L.W. (1983), "Ad hoc Categories", *Memory and Cognition*, Vol 11, pp. 211-227.
- Bettman, J. and Park, C.W. (1980), "Effect of prior knowledge and experience and phase of choice process on consumer decision processes: a protocol analysis", *Journal of Consumer Research*, Vol 7 No 3, pp. 234-248.
- Brucks, M. (1985), "The effect of product class Knowledge on information search behaviour", *Journal of Consumer Research*, Vol 12 No 1, pp. 1-16.
- Campbell, M.C. and Goodstein, R.C. (2001), "The moderating effect of perceived risk on consumers' evaluations of product incongruity: preference for the norm", *Journal of Consumer Research*, 28 No 3, pp. 439-449.
- Carlson J.P., Vincent L. H., Hardesty D.M. and Bearden W.O., (2009), Objective and Subjective Knowledge Relationships: A Quantitative Analysis of Consumer Research Findings, *Journal of Consumer Research*, Vol 35 No 5, pp.864-865.
- Celhay, F. (2011), Design du packaging, appréciation esthétique et intention d'achat : l'impact du jugement d'atypicalité. Une application au cas des vins de Bordeaux, Thèse doctorale, Université Montesquieu – Bordeaux IV, 23 novembre 2010, Bordeaux.
- Celhay, F. and Passebois, J.(2011), "Wine labelling: is It time to break with tradition? A study of the moderating role of perceived risk", *International Journal of Wine Business Research*, Vol 23 No 4, pp. 318-337.
- Chi, M., Glaser, R. and Rees, E. (1982), "Expertise in problem solving", in K. J. Sternberd (ed.), *Advances in The Psychology of Human Intelligence*, Vol 1, Hisdale, NJ: Laurence Erlbaum Associates.
- Cohen, E. (2009), "Applying best-worst scaling to wine marketing", *International Journal of Wine Business Research*, Vol 21 No 1, pp. 8-23.
- Concha, R., Kyeong, S.M. and Kennett-Hensel, P.A. (2010), "Contingent consumer decision making in the wine industry: the role of hedonic orientation", *Journal of Consumer Marketing*, Vol 27 No 4, pp. 324-335.
- Deon, K. and Sweeney, J. (2007), "The effect of knowledge types on consumer perceived-risk and adoption of genetically modified food", *Psychology & Marketing*, Vol. 24 No 2, pp. 171-193.

- Deseay, K.K. and Hoyer, W.D. (2000), "Descriptive characteristics of memory-based consideration sets: influence of usage occasion", *Journal of Consumer Research*, Vol 27 No 3, pp. 309-323.
- Dodd, T.H., Laverie, D.A., Wilcox, J.F. and Duhan, D. (2005), "Differential effects of experience, subjective knowledge and objective knowledge on sources of information used in consumer wine purchasing", *Journal of Hospitality and Tourism Research*, Vol 29 No 1, pp. 3-19.
- Dodds, W.B., Monroe, K. and Grewal D. (1991), "Effects of price, brand store information on buyers' product evaluation" *Journal of Consumer Research*, Vol. 28, pp. 307-19;
- Dowling, G.R. (1986), "Perceived Risk: The concept and its measurement", *Psychology & Marketing*, Vol. 3 No 3, pp.193-210.
- Dowling, G.R. and Staelin, R. (1994), "A model of perceived risk and intended risk-handling activity", *Journal of Consumer Research*, Vol. 21 No 1, pp. 119-134.
- Edward, F. and Mort, G. (1991), "The expert wine taster", *Journal of Wine Marketing*, Vol 3 No 1, pp. 19-44.
- Flynn, L.R. and Goldsmith, R.E. (1999), "A Short, Reliable Measure of Subjective Knowledge", *Journal of Business Research*, Vol 46, No 1, pp. 57-66.
- Espejel, J. and Fardos, C. (2009), "Wine marketing strategies in Spain: a structural equation approach to consumer response to protected designations of origin (PDO)", *International Journal of Wine Business Research*, Vol 21 No 3, pp. 267-288.
- Frøst, M.B. and Noble, A.C. (2002), Preliminary study of the effect of knowledge and sensory expertise on liking for red wines. *American Journal of Enology and Viticulture*; Vol 53, pp. 275–284.
- d'Hauteville, F. and Sirieix, L. (2007), "Understand the consumer of wine", in *Bacchus 2008*, J.-P.Couderc, H. Hanin, F. d'Hauteville and E. Montaigne (Eds.), Dunod, France, pp. 105-135.
- Heeler, R.M., Okechucu, L. and Reid, S. (1979), "Attribute importance: contrasting measurements", *Journal of Marketing Research*, Vol 26 No 1, pp. 60-63.
- Jacoby, J. and Kaplan, L.B. (1972), "The components of perceived risk", in Venkatesan, M. (Ed.), *Advances in Consumer Research*, Association for Consumer Research, Chicago, IL, Vol. 3, pp. 382-93.
- Johnson, T.E. and Bastian, S.E.P. (2007), A preliminary study of the relationship between Australian wine consumers' wine expertise and their wine purchasing and consumption behavior, *Australian Journal of Grape and Wine Research*, Vol 13, pp. 186–197.
- Johnson, M. D. and Lehmann, D. R. (1997), "Consumer experience and consideration sets for brands and product categories", in M. Brucks and D.J. MacInnis (Eds.), Provo, UT, *Advances in Consumer Research*, Association for consumer research, Vol 24, pp. 295-300.
- Kardes, F.R., Gurumurthy, K., Chandrashekar, M. and Dornoff, R.J. (1993), "Brand retrieval, consideration set composition, consumer choice, and the pioneering advantage", *Journal of Consumer Research*, Vol. 20 No 1 , pp. 62-75.
- Koewn, C. and Casey, M. (1995), "Purchasing behaviour in the Northern Ireland wine market", *British Food Journal*, Vol 97 No11, pp. 17-20.

- Korchia, M. (2004), "The Effects of Brand Associations on Three Constructs", *Proceedings from the 30th EMAC Conference*, Murcia, Spain.
- Lacey, S., Bruwer, J. and Li E. (2009), The role of perceived risk in wine purchase decisions in restaurants, *International Journal of Wine Business Research*, Vol 21 No 2, pp. 99-117.
- Laroche, M., Chankom, K. and Takayoshi, M. (2003), "Which decision heuristics are used in consideration set formation?" *Journal of Consumer Marketing*, Vol. 20 No 3, pp. 192-209.
- Latour, K.A, Latour, M.S. (2010), "Bridging Aficionados' Perceptual and conceptual knowledge to enhance how they learn from experience", *Journal of Consumer Research*, Vol 37 No 4, pp. 688-697
- Lockshin, L.S. and Rhodus, W.T. (1993), "The effect of price and oak flavour on perceived wine quality", *International Journal of Wine Marketing*, Vol 5 No 2, pp. 13-25.
- Maheswaran, D., Sternthal, B. and Zeynep, G. (1996), "Acquisition and impact of consumer expertise", *Journal of Consumer Psychology*, Vol 5 No 2), pp. 115-133.
- Mishra S.K. and Kumar M. (2010), "How mutual fund investors 'objective and subjective knowledge impacts their information search and processing behavior", *Journal of Financial Services Marketing* Vol 16 No 1, pp. 27-41.
- Mitchell, A. and Dacin, P. (1996), "The assessment of alternative measures of consumer expertise", *Journal of Consumer Research*, Vol 23 No 3, pp. 219-139.
- Moorman, C., Diehl, K., Brinberg, D. and Kidwell, B. (2004), Subjective knowledge, search locations, and consumer choice, *Journal of Consumer Research*, Vol 31 No3, pp. 673-680.
- Nedungadi, P. (1990), "Recall and consumer consideration sets: influencing choice without altering brand evaluation", *Journal of Consumer Research*, Vol 17 No 3, pp. 263-276.
- Orth, U.R. and Krska, P. (2002), "Quality signals in wine marketing: the role of exhibition awards", *International Food and Agribusiness Management Review*, Vol 4, pp. 385-397.
- Orth, U.R., Limon, Y. and Rose, G. (2010), "Store-evoked affect, personalities and consumers emotional attachments to brands", *Journal of Business Research*, Vol 63, pp. 1202-1208.
- Orth, U.R., McGarry, M. and Dodd, T.H. (2005), "Dimensions of wine region equity and their impact on consumer preferences", *The Journal of Product & Brand Management*, Vol 14 No 2/3, pp. 88-97.
- Parr, W.V., Heatherbell, D. and White, K.G. (2002), "Demystifying wine expertise: olfactory threshold, perceptual skill and semantic memory in expert and novice wine judges", *Chemical Senses*, Vol 27, pp. 747-755.
- Park, C.W., Motherbaugh, D.L. and Feick, L. (1994), "Consumer Knowledge Assessment", *Journal of Consumer Research*, Vol 21 No 1, pp. 71-82.
- Perrouty, J., d'Hauteville, F. and Lockshin, L.S. (2004), "Impact of interaction between brand and region of origin on the perceived value of wine", *Congrès de l'Association Française de Marketing*, 20, Saint-Malo.
- Perrouty, J.F., d'Hauteville, F. Lockshin, L. (2006), "The influence of wine attributes on region of origin equity: An analysis of the moderating effect of consumer's perceived expertise", *Agribusiness* Vol 22, pp. 323-341.
- Petr, C. and Hess-Miglioretti, A. (2010), "La méthode des tables d'information : un renouvellement grâce à Internet" ?, *Décisions Marketing*, No 57, January-Marsh, pp. 19-30.

- Popper, K. (1979), "*Objective Knowledge: an evolutionary approach*", Oxford University Press.
- Punj, G. and Srinivasan, N. (1989), "Influence of expertise and purchase intention on the formation of Evoked Sets", in T. K. Srull (Ed.), Provo, UT, *Advances in Consumer Research*, Association for consumer research, Vol 16, pp. 507-514.
- Quester, P.G. and Smart, J. (1998), "The influence of consumption situation and product involvement over consumers' use of product attributes", *The Journal of Consumer Marketing*, Vol. 15 No3, pp. 220-238.
- Rasmussen M. and Lockshin L. (1999), "Wine choice behaviour: the effect of regional branding", *International Journal of Wine Marketing*, Vol 11 No 1, pp. 36-46.
- Roberts, J. (1989), "A grounded model of consideration set size and composition", in T. K. Srull (Ed.), Provo, UT, *Advances in Consumer Research*, Association for consumer research, Vol 16, pp. 749-757.
- Rodriguez-Santos, C., Cervantes-Blanco, M. and Gonzalez-Fernandez, A. (2006), "Segmenting consumers according to their involvement with appellations of origin", *Journal of Brand Management*, Vol.13 No 4/5, pp. 300-312.
- Roselieus, T. (1971), "Consumer ranking perceived risk: conceptualisation and models", *European Journal of Marketing*, Vol. 35 No1, pp. 56-61.
- Selnes, F. and Gronhaug K. (1986), "Subjective and objective measures of product knowledge contrasted," in *Advances in Consumer Research*, Vol 13, ed. Richard J. Lutz, Las Vegas, NV: Association for Consumer Research, pp. 67-71.
- Shoker, A.D., Ben-Akiva, M. Boccara, B., and Nedungadi, P. (1991), "Consideration set influences on consumer decision making and choice: issues, models and suggestions", *Marketing Letters*, Vol. 2 No 3, pp. 181-97.
- Sirieux L. and Morrot G. (2001), "Trust orientations and purchase behaviour: the case of wine purchase", *17^{ième} Congrès de l'Association Française de Marketing*, Deauville.
- Solomon, G. (1998), Psychology of novice and expert wine talk, *American Journal of Psychology*, Vol. 103 No 4, pp. 495-517.
- St James, M. and Christodoulidou, N. (2011), "Factors influencing wine consumption in Southern California consumers", *International Journal of Wine Business Research*, Vol 23, No 1, pp.36-48.
- Stone, R.N. and Grønhaug K. (1993), "Perceived risk: further considerations for the marketing discipline", *European journal of marketing*, Vol 27 No 3, pp. 39-50.
- Veale, R. and Quester, P. (2009), "Do consumer expectations match experience? Predicting the influence of price country of origin on perceptions of product quality", *International Business Review*, Vol 18, pp.134-144.
- Verdu Jover, A. J., Lloréns Montes, F. J. and Fuentes Fuentes, M.d.M. (2004), "Measuring perceptions of quality in food products: the case of red wine", *Food Quality and Preference*, Vol 15, pp. 453-469.
- Viot, C. and Passebois-Ducros J. (2010), "Wine brands or branded wines", *International Journal of Wine Business Research*, 22, 4, 406-422.
- Wirtz, J. and Mattila, A. (2003), "The effects of consumer expertise on evoked set size and service loyalty", *Journal of Services Marketing*, Vol 17 No 7, pp. 649-665.

Zaichkowsky, J. (1985), "Measuring the involvement construct", *Journal of Consumer Research*, Vol 12 No 3, pp. 341-352.

Appendix I- Attributes importance

	Subjective knowledge	N	Mean	S. D.	MD	t
1. Château name	Low level	87	2.79	.942	-.36	-2.495*
	High level	93	3.15	.977		
2. Grape variety	Low level	87	2.28	.872	-.68	-4.829***
	High level	93	2.96	1.010		
3. "Bottled at the estate/a the château"	Low level	87	2.64	.940	-.78	-5.77***
	High level	93	3.42	.864		
4. AOC	Low level	87	2.80	.950	-.64	-4.869***
	High level	93	3.44	.800		
5. Opinion of the wine waiter	Low level	87	2.10	1.000	-.15	-0.983ns
	High level	93	2.26	1.102		
6. Price	Low level	87	3.34	.819	.23	1.723ns
	High level	92	3.12	.924		
7. Medals/ awards	Low level	87	2.52	.900	.09	0.673ns
	High level	92	2.42	.952		
8. Colour	Low level	87	2.64	1.023	-.31	-2.020*
	High level	92	2.96	1.047		
9. Country of origin	Low level	87	2.98	.792	-.33	-2.608**
	High level	93	3.31	.921		
10 Promotions	Low level	87	2.39	1.093	.35	2.100*
	High level	92	2.04	1.118		
11. Recommendations from friends or co-workers	Low level	87	2.89	.855	.1	.105ns
	High level	93	2.87	.935		
12. Official rankings	Low level	87	2.61	.867	-.56	-4.084***
	High level	93	3.17	.974		
13. Region of production. <i>terroir</i>	Low level	87	2.89	.920	-.76	-6.534***
	High level	92	3.64	.604		
14. Alcoholic content	Low level	87	1.92	.991	0	-.30ns
	High level	92	1.92	.986		
15 Organic vine	Low level	87	1.72	.911	.07	.541ns
	High level	92	1.65	.870		
16 Shape and design of bottle	Low level	87	2.47	.963	.69	5.057***
	High level	93	1.78	.858		
17. Vintage	Low level	87	3.07	.900	-.61	-5.391***
	High level	93	3.68	.593		
18. Wine merchant name	Low level	87	1.60	.799	-.21	-1.581ns
	High level	93	1.81	.958		
19. <i>Vin de pays</i>	Low level	87	1.74	.842	-.28	-1.825ns
	High level	93	2.01	1.147		
20. Type of cork of cap	Low level	87	2.32	1.084	-.42	-2.463*
	High level	93	2.74	1.197		
21. Shape and aspect of the label	Low level	87	2.38	.943	.18	1.181ns
	High level	93	2.20	1.038		

	Subjective knowledge	N	Mean	S. D.	MD	t
22. Opinion of the press	Low level	86	1.85	.888	-.22	-1.570ns
	High level	92	2.07	.947		
23. Brand name	Low level	87	2.32	.958	-0.9	-.576
	High level	93	2.41	1.055		
24. Environmentally-friendly wine	Low level	87	1.61	.768	-.24	-1.830ns
	High level	92	1.85	.960		
25. General look of the bottle	Low level	87	2.63	.941	.41	2.975**
	High level	92	2.22	.924		
26. Experts' opinion (Parker. Hachette...)	Low level	87	2.15	1.029	-.21	-1.390ns
	High level	91	2.36	1.017		
27. Information on the label and back-label	Low level	87	2.34	.986	.30	2.038*
	High level	93	2.04	.999		
28. Age	Low level	87	2.99	.921	-.64	-5.603***
	High level	93	3.62	.569		
29. "Winegrower"	Low level	87	2.13	.962	-.75	-4.884***
	High level	93	2.88	1.102		
30. "Aged in oak barrels"	Low level	87	2.33	.960	-.63	-4.047***
	High level	92	2.97	1.124		

SD = Standard Deviation; MD = Mean Difference

Appendix II – Example of questions concerning the consideration set size and variety

If you had to buy a bottle of wine for one of the situations envisaged below, which kind of wine you would choose?

Situation 1 – You buy a bottle of wine for a meal at friends' house.

1. Bordeaux wine yes no

If the response is “yes”, could you indicate which wine(s)

2. Wines from another French region yes no

If the response is “yes”, could you indicate which wine(s)

3. Foreign wines yes no

If the response is “yes”, could you indicate which wine(s)

These questions were repeated for the five *scenarii*.

Appendix III- Subjective knowledge measurement scale

	Factor loadings	Cronbach's α
In your opinion, what is your level of knowledge of wines in general? (1 = non-existent; 4 = excellent).	.872	
Compared to the average consumer, would you say that your knowledge of wine is (1 = non-existent; 4 = excellent).	.877	.879
I am familiar with wine. (1 = totally disagree; 4 = totally agree).	.825	
I know wine very well. (1 = totally disagree; 4 = totally agree).	.865	

KMO = 0.819; Bartlett : $\chi^2=612$ (6 *df*) $p<0.001$; Explained variance: 74%.

Appendix IV – Consideration set content

Origin	Cate- gories	S1. Purchase of wine to offer it	S2. Purchase of wine for a festive meal...	S6. Purchase of wine for a BBQ with friends	S5 . Purchase of wine for usual consumption					
Bordeaux wines	AOC	Saint Emilion	31* +23**	Saint Emilion	32 + 27	Médoc	11 + 7	Médoc	16 + 13	
		Médoc	14 + 11	Pessac Léognan	6 + 11	Saint Emilion	5 + 7	Pessac Léognan	7 + 9	
		Pessac Léognan	6 + 13	Médoc	6 + 9	Pessac Léognan	0 + 7	Graves	8 + 6	
		Pomerol...	9 + 0	Sauternes	14 + 0	Bordeaux & Bdx supérieurs	7 + 0	Côtes de Bordeaux...	7 + 0	
	Châteaux	Margaux	5 + 2	Margaux	4 + 3	Saint Pey Haut	1 + 0	Segur	1 + 0	
		Carbonnieux	1 + 1	Haut Brion	2 + 1	Mont (Bdx sup)		Cos d'Estourel	1 + 0	
		L'Angelus	1 + 0	Smith Haut Lafite	1 + 0			Thieuley...	1 + 0	
		Haut Brion...	1 + 0	Cheval Blanc...	1 + 0					
	Brands	-	0	Petrus	1 + 0	Baron de Lestac	1 + 0	Baron de Lestac	1 + 0	
				Mouton Cadet	1 + 0	Clairet de Quinsac	1 + 0	Clairet de Quinsac	1 + 0 0 + 1	
								Malesan		
	Other French wines	Regions	Burgundy	14 + 12	Champagne	11 + 11	Provence	6 + 7	Burgundy	11 + 8
			Champagne...	6 + 7	Burgundy	12 + 5	Loire	6 + 5	Loire	10 + 0
					Alsace...	9 + 5	Côtes du Rhône	6 + 0	Côtes du Rhône	7 + 0
Brands						...		Alsace	0 + 4	
								Côtes de	0 + 4	
								Provence...		
								Tariquet	0 + 1	
Foreign wines		Countries	Australia	3 + 3	Spain	5 + 1	Spain	4 + 1	Spain	9 + 2
			Italy...	0 + 5	Argentina	2 + 3	Chile	3 + 5	Chile	4 + 4
					Chile	0 + 3	Argentina	3 + 1	Australia	3 + 2
				Italy	2 + 1	California	2 + 3	Italy	3 + 1	
	Regions	Australia...	2 + 0	Australia...	2 + 0	South Africa...	2 + 0	Argentina...	3 + 1	
		Rioja (SP)	2 + 2	Rioja	1 + 1	Rioja	2 + 1	Rioja	2 + 2	
		Chianti	0 + 2	Lambrusco (IT)	1 + 1	Lambrusco	1 + 2	Lambrusco	1 + 2	
	Brands	South America...	0 + 2	...		South America...	1 + 1	Dao (Portugal)...	2 + 0	
		Opus 1 (Calif.)	2 + 0	Casilero del	0 + 1	Marques de	0 + 2	Marques de	0 + 1	
		Sidi Brahim (Algeria)	0 + 2	diablo (Chile) Tio Pepe (SP)	0 + 1	Caceres (SP) Sidi Brahim...	1 + 1	Caceres...		

* Frequency for expert consumers. ** Frequency for novice consumers. N = 180 (93 “experts” + 87 “novices”)