Measurement of consumers'

wine-related knowledge

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MEASUREMENT OF CONSUMERS' WINE-RELATED KNOWLEDGE

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Introduction

It is often stated, according to the paradigm of knowledge-based economy, that information asymmetry between consumers and producers will be reduced thanks to information availability and dissemination through the Internet or other media channels. Conversely, several articles have pointed-out that knowledge-based economy reinforces the information asymmetry between experts and novices among the consumers [11, 10, 1]. Accordingly, we consider the non homogeneity of consumers and try to identify and qualify the differences between several groups of French respondents regarding wine consumption by means of a k-means clustering applied to a knowledge-oriented questionnaire.

Consumer knowledge with respect to wine

When choosing wine, consumers have to process several information regarding price, brand, vintage or grape, and so on. Once at home those who whish to be reinsured on the bottle they bought, can often find an overflow of information available on the Internet though plenty of websites coming not only from companies but also from consumer associations or simply end-users clubs. However, most information available needs some skills in order to be intelligible. The main question may be: Are consumers able to interpret this overflow of information? In other words: Are professional worlds still open for consumers? It was pointed out that the product class knowledge of respondents lowers the total search effort in view of a purchasing purpose [3]. We consider that consumer search for information is not always provoked by immediate purchasing purpose, and may participate to a broader objective of building up knowledge-based expertise [4]. In the wine sector, it is generally considered that consumers' knowledge is supply-chain driven as tasting is only possible after purchasing, and, when selling wine, stakeholders are almost all telling a story through labelling and wine guides.
From a sensory perspective, it was proven that information provided on the label of a bottle allows consumers to discriminate Champagnes, while blind test does not [12]. It was pointed out that, for white wine, the context has a huge influence on the perception of wine, even for oenologists [5]. More generally, wine appreciation is mainly based on semantic information [7, 9]. For instance, it was recently demonstrated that women may express a positive

willingness to pay for men-recommended wines [6]. It was also found that consumer knowledge of wine regions is operating during choice-making process for wine [2].

It was recently demonstrated that providing information is not leading to increased knowledge, as consumers are overwhelmed by warnings from consumer protection organizations, the media, government, and various scientific studies [8]. They have often received conflicting information. The authors have shown that consumers are reasonably intelligent in their evaluation of information. They responded differently to information perceived as biased versus information perceived as objectively reported.

The phenomenon of cognitive overload due to limited information processing capabilities is well documented in the psychology literature [1] and might be illustrated in the case of consumer attitude with respect to food. It was shown that the overload and complexity of information on food products results in misunderstanding and misinterpretation. Even when information is made sufficiently available and accessible to consumers, only a limited amount of this information is attended to consumers' attention in an environment characterised by information overload and raising interest for being processing. Furthermore, there is a real potential danger of information overload. Interestingly, it was shown that consumers can decide to remain rationally ignorant due to the opportunity costs of information processing, related to time and allocation of cognitive capacity, exceed the expected marginal benefit of being fully informed [13].

Survey and data collection

The paper presents the results of a consumer survey carried-out in France in 2007, focusing on knowledge on wine. French consumers are deemed to frequently experience such beverage. The studied item was white wine, whose consumption is less popular and more selective in France than red wine. We assume some information asymmetry exists among consumers, which means that close to the area of production, they may have develop some familiarity with a given wine, rather than those living far from this area. Hence, the survey was split into two different regions, namely Burgundy and Auvergne. The first is the genuine place of famous wines, while the second is not known for its wine production. So the sampling was divided between local region and far-off one regarding the area of wine production.

The first step of the survey involved a household self-report of purchasing behaviour, of wine, indicating the concrete items bought during the three months preceding the survey. Then a questionnaire was applied to the respondents. The questionnaire included many questions on key dimensions of product-oriented knowledge: processing, semantic and geography, all related to the relevant category of food product, in order to assess respondents' awareness on the given wine, some questions were devoted to the usual socio-demographic descriptors of the respondents.

Questions focused on time or spatial dimensions of the checked knowledge on processing, harvesting, wine-making, labelling, … For instance, one of the processing-oriented questions was "Blending white and red wines is allowed for rosé wine-making, which one? [Champagne rosé, rosé d'Anjou, rosé de Provence, don't know]" (correct response is underlined). The semantic side of knowledge relating to general culture on wine, including wording and naming, was screened with questions such as "What is a vintage wine? A wine [older than 10 years, made from a single harvest, coming from a famous vineyard, don't know]". About the geographical dimension of knowledge, one of the questions was "What is the main grape variety used for making Côte Rotie wine? [Cabernet-Sauvignon, Syrah, Merlot, don't know]". Thus, each respondent was valued on the basis of the level of knowledge shown through his/her responses among the three dimensions: processing,

semantic and geography. For these dimensions an individual synthetic rating was given to each respondent considering the modalities high, medium and low level of knowledge.

Measurement and results

The distribution of ratings issued from the above-mentioned coding of knowledge level according to wine indicates that geography about wine is the dimension of knowledge most shared among the respondents, whereas the processing-related dimension for the studied products is more discriminating. General culture of products (semantic knowledge) is in medium position. As the panellists were recruited among the wine consumers, being aware that the survey will focus on white wine, those interested by white wine consumption, seem to be a bit more represented within the panel, compared to the usual or casual consumers. Hence the high proportion of respondents showing a high level of processing-related knowledge may be higher than expected. However, the targeted category Chardonnay, was never quoted during the recruitment process, nor during the questionnaire stage, in order not to introduce bias in responses.

Then, a k-means clustering was used in order to better explain the diversity of knowledge displayed by the respondents according to the selected products. K-means method uses the non-hierarchical clustering procedure: objects are assigned into clusters once the number of clusters to be formed is specified. Four significant segments of respondents were found by means of this method of classification. Each cluster is described by its relative positioning according to the level of knowledge in each dimension. The classes are well identified, fairly described and very well separated. As expected, the distance between classes 1 and 4 is maximum as they are at the extreme positioning within the clustering. The clusters of classes 3 and 2 are also well established. Processing-related knowledge and Geographical knowledge are well discriminating classes, but Semantic knowledge is acting in a lower extent.

When looking at explanatory data in order to better characterize the classes, some cross-tabulations were found as significant. For the class 1, so-called *Expert*, the main explaining factors are: self-statement of respondent as well aware about wine, using direct sale as a purchasing channel, region of residence, readings on oenology, level of stocks of wine from Burgundy, diversity of regions in the own wine cellar, number of bottles of white wine in the own wine cellar.

Conclusion

While knowledge-based economy states that information asymmetry between consumers and producers may be reduced by providing information available, it was shown in the present study that the different dimensions of knowledge do not fit similarly to consumers' expectations according to their level of awareness. Processing-related knowledge is not well addressing demand of information from usual or casual consumers, while it is worth to highlight for connoisseur or expert. On another hand semantic or geographical information, such as wording, naming, labelling or branding, would be better affordable for less involved and less aware consumers and will better address their expectations, not so focused but still worth to consider. The worse would be to provide information without any clear target nor focus, apart from providing information *per se*! This practice will lead for sure at fuelling the cognitive overload of consumers by means of undifferentiated flow of information. This tendency would probably increase the information asymmetry within the consumers.

Interestingly, the results of the present study indicate that, among the respondents, the classes *Expert* and *Novice* are operating and fruitful categories when explaining consumers' knowledge related to wine. However these extreme categories do not fully document the wide

spectrum of replies collected. The intermediate classes *Knowledgeable* and *Connoisseur* have to be considered as promising medium categories in order to avoid binary analysis with loss of explained variance. In the case of France, where the culture of wine is still vivid, the multidimensional aspects of wine knowledge should not be forgotten.

However, the present findings focus only on one country and one wine broad category, they should be cross-compared with other countries and/or more precise wine items in order to be enhanced. Self-estimation of wine knowledge was found as easy to identify but not reliable enough for solid clustering, although it fits well with the knowledge of the extreme classes of respondents. When the objective is to reach sufficient reliability of measurement, self reporting of purchases was estimated as promising proxy of clustering when cross-tabulated with different dimensions of knowledge. According to their low cost, self-estimation of wine knowledge and self reporting of wine's purchases might be considered as interesting trade-off for measurement of consumer knowledge with respect to wine.

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