Does Knowledge-Based Economy Speaks to Consumers? A French Case Study with Respect to Food Products

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Does Knowledge-Based Economy Speaks to Consumers? A French Case Study with Respect to Food Products[1]

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Introduction

The paradigm of knowledge-based economy states that information asymmetry between consumers and producers will be reduced thanks to information availability and dissemination through the Internet or other media channels. Conversely to this statement, some published articles shown that knowledge-based economy reinforces the information asymmetry between experts and novices among the consumers (Hogg *et al*., 2007; Gregan-Paxton & Roedder-John, 1997; Alba & Hutchinson, 1987). Accordingly, we will consider the non homogeneity of consumers and will try to identify and qualify the differences between several groups of respondents regarding two food items by means of a k-means clustering applied to a knowledge-oriented questionnaire.

Rationale

When choosing food items in store, consumers are facing to several information regarding price, brand, nutritional facts or components, best-before-date, and so on. Once at home those who whish to be reinsured on the products they bought, can 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?
Beatty and Smith have pointed out that the product class knowledge of respondents lowers the total search effort in view of a purchasing purpose (Beatty & Smith, 1987). According to Bloch *et al*., 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 (Bloch et al. 1986). Grunert *et al*. measured a self-estimated knowledge on meat products. The authors consider that experience and knowledge are two separate dimension of consumers expectations (Grunert *et al*., 2004).
Conley and Wade have 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. They have often received conflicting information.* The authors shown that c*onsumers are reasonably intelligent in their evaluation of information.* They responded differently to information perceived as biased versus information perceived as objectively reported (Conley & Wade, 2007).

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The phenomenon of cognitive overload due to limited information processing capabilities is well documented in the psychological literature (Alba & Hutchinson, 1987) and was well illustrated in the case of consumer attitude with respect to food (Gellynck *et al*., 2006). Gellynck *et al.* 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, McCluskey and Swinnen 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* (McCluskey & Swinnen, 2004).

Material and Method

The paper presents the results of a consumer survey carried-out in France in 2007, focusing on knowledge on food product categories, namely cheese and wine. French consumers are deemed to frequently experience such food items, however, the second studied item was white wine, whose consumption is less popular and more selective in France. 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 product, rather than those living far from this area. Hence, the survey was split into two different regions, namely Auvergne and Burgundy. The first is well-known for its excellent cheese production, the second is the genuine place of famous wines. So the sampling was divided between far-off region and local one regarding the area of wine production and vice-versa for cheese.
The first step of the survey involved a household self-report of purchasing behaviour, of cheese or wine, indicating the concrete items bought during the three months preceding the survey. Then a questionnaire was applied to 480 respondents, 220 respondents were surveyed on wine and 260 on cheese. The questionnaire included fifty 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 product, some questions were devoted to the usual socio-demographic descriptors of the respondents.
Questions were quite similar for wine compared to cheese, focusing on time or spatial dimensions of the checked knowledge on processing, harvesting, ripening, labelling, … For instance, one of the processing-oriented questions was "During wine making process, what is the first fermentation [alcoholic - malolactic - semi-carbonic - don't know]?" and its symmetrical question was "What is the first stage of cheese making [draining, moulding, curdling, don't know]?". The semantic side of knowledge relating to general culture on studied categories of food product including wording and naming, was screened with questions such as "In which country is located the most important vineyard over the world [Fr, Sp, It, USA, don't know]?" and "In which country is the most important cheese consumption per capita [NL, Fr, Sp, USA, It, don't know]?". About the geographical dimension of knowledge, one of the questions was "What is the peculiarity of wine *Château-Grillet* [most expensive French PDO wine, most northern French PDO wine, smallest French PDO vineyard, don't know]?", the symmetry was "What is the peculiarity of cheese *Roquefort* [most expensive French PDO cheese, oldest French PDO cheese, most exported French PDO cheese, 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.

Results and Discussion

The distribution of ratings issued from the above-mentioned coding of knowledge level according to the considered product indicates that geography about wine and cheese 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, notwithstanding better shared among respondents regarding cheese.
As the panellists were recruited among the consumers of the studied products, being aware that the survey will focus on the given category, the connoisseurs, interested by the survey, 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.
According to Alba and Hutchinson, we call *experts* those of the respondents with a high level of knowledge, whatever the dimension of this knowledge is, and *novices* those showing a low level of knowledge (Alba & Hutchinson, 1987). As the level of knowledge is spread between three dimensions, namely processing-related, semantic or geography, the breakdown of respondents into *experts* versus *novices* will not be fully reliable per se and needs to be refined by means of clustering analysis.
Finally 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 (processing-related, semantic, geographical).

The classes are well identified and fairly described. The *novices* represent 42.7%, the *knowledgeable consumers* are 33.7%, the *experts* count for 14.1% and *geographers* are 9.5%. The classes are very well separated. As expected according to Alba and Hutchinson, the distance between *experts* and *novices* is maximum (Alba & Hutchinson, 1987). However the small cluster of *geographers* is also well established. It is worth mentioning that the difference between k*Knowledgeable consumers* and *experts* may be subtle according to the dimension of knowledge. In both wine and cheese, *geographical knowledge* first and *processing-related knowledge* are well discriminating variables, while *semantic knowledge* is less acting within the clusters' identification.

When looking at explanatory data in order to better characterize the classes, some cross-tabulations were found as significant. For wine, the main explaining factors are: self-statement of respondent as connoisseur, 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. Gender, income, age, focused purchase and variety seeking are less but still acting factors. For cheese, the main explaining factors are: self-statement of respondent as connoisseur, income, variety seeking and age. The level of education is also acting albeit in a minor extent.

Conclusion and Managerial Implications

Accordingly, efficient advertising and communication plans should take into account these refinements of targeting consumers. While knowledge-based economy states that information asymmetry between consumers and producers may be reduced by providing information available on the Internet, 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 connoisseurs or experts. 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.

Finally, the results of the present study indicate that, among the respondents, *experts* and *novices* are operating and fruitful categories when explaining consumers knowledge related to food. However these extreme categories do not fully document the wide spectrum of replies collected. *Knowledgeable consumers* has to be considered as a promising medium category in order to avoid binary analysis with loss of explained variance. In the case of France, where the culture of regional food is still vivid, and obviously in the case of wine and cheese, the geographical dimension of knowledge should not be forgotten. The present findings should be checked in other countries with other food items in order to be enhanced.

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