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Sense Effects about Wine Consumption by Means of Self-Reports and Neuromarketing Methods

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In this paper expert and non expert consumers reactions about wine consumption are studied by means of traditional self-questionnaires and neuromarketing methods as electroencephalography and eye-tracking. Data from self-questionnaires allow to identify the most import factors mediating wine evaluation, while data from electroencephalography show how non expert consumers feel stressed by wine evaluation in comparison to expert ones. Eye-tracking data show how expertise mediates time spent to process visual elements on wine labels. These techniques can lead to a model enabling to better understand consumers evaluation about wine.

Track: Marketing

1. Introduction

Functional features about wine products are mediating consumer evaluation in combination to brand-related elements that taken all together provide a multisensory experience (Ding and Tseng, 2015). Sensory characteristics elicit cognitive and affective responses, which influence consumers evaluation of wine brands and products (Krishna, 2012). Wine is a special kind of product as it cannot be truly evaluated until the product has been tasted. Generally this kind of products are studied in the scientific literatures by means of self-questionnaires that consumers fill in. However, due the complexity of the wine consumption experience, these kind of techniques are often not enough to enable to understand in a precise and systematic way consumer behavior. For this reason, as in the last decades the application of neuroscientific methods to consumer study showed an increasing trend (Plassmann et al., 2008), there is the need to develop empirical methods that allows to deeply understand consumers responds in order to derive a predictable model of consumer behavior.

2. Literature Review

Scientific literature in the field of marketing focuses the attention on intrinsic and extrinsic features in matter of wine products (e.g., Camillo, 2012; Martinez et al, 2006). On one side intrinsic features are related to the physical characteristics of wine that cannot be changed in the final product until it has been consumed (Olson and Jacoby, 1972): for instance flavor, color and grape variety (e.g., Jover et al., 2004). On the other side, extrinsic products are not physically part of wine product (Olson, 1977), for instance brand, price, labels, bottle

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shape and color, and purchase context (Mueller and Szolnoki, 2010). Last but not least, expertise in matter of wine is a key factor that mediates wine evaluation. Previous studies have found that, when making their purchase decision, consumers with high level of knowledge rely more frequently on intrinsic cues compared to consumers with lower level (Phau and Suntornnond, 2006).

3. The Methodology

About traditional techniques, a questionnaire was developed to assess the effect of expertise on the evaluation of the attributes of wine through self-reported questions covering different aspects in relation to the wine the respondent preferred. A total of 698 questionnaires were collected. About neuromarketing techniques, 20 expert sommelier and 20 non expert subjects were enrolled in an experimental study where they had to taste two wine products, one expensive and the other not expensive, in two experimental situations: blind (with no information about the wine) and informed (while exposed to the wine bottle with label and price). During blind conditions electroencephalographic (EEG) measurements were collected. During informed situation EEG and eye-tracking (ET) data were recorded simultaneously from all participants.

4. The Findings

A two-way ANOVA was carried out to assess the effect of intrinsic and extrinsic attributes on wine choice according to the expertise of the respondents to self-questionnaire. The level of expertise exhibits a significant effect on wine choice for all variables: sight ($F(1, 698) = 20.99$, $p < .001$), olfaction ($F(1, 698) = 35.63$, $p < .001$), taste ($F(1, 698) = 51.65$, $p < .001$), functionality ($F(1, 698) = 23.48$, $p < .001$) and POP ($F(1, 698) = 62.30$, $p < .001$). In particular, high-expertise consumers showed higher means for all the sensory and non-sensory variables; this means that the higher the expertise, the higher the consumer's consciousness of what is truly important when choosing a wine. About lab experiment, in terms of liking non experts consumers showed in the blind condition an average score of 33.43 with respect to the expensive wine, while in the informed condition a score of 46.33. After seeing the label and knowing the price, average level of linking has increased significantly up to 13 points. The difference between the average liking in blind condition and the informed one was significant (t test: $p = .0003$). As for the non-expensive wine, non experts showed their highest level of liking in the blind condition (51.81 points), while in the informed condition the score decreased to 35.62. Also in this case the difference was significant (t test: $p = .0281$). Instead, experts scored higher for the expensive wine both in the blind condition (64.25) and in the informed (66.75), while for the non-expensive wine their liking dropped to 49.65 in the blind condition and 44.7 in the informed condition. In all cases the difference was not significant (t test: $p = .7266$ for the expensive wine; t test: $p = .4479$ for the non-expensive wine). This highlights the importance of expertise factor in wine evaluation. Due to their expertise that allows to process wine product relying on the intrinsic features of the wine (blind condition), the presence of extrinsic information conveyed by price and labels seems to impact in milder way in comparison to non experts that show a significant change in their opinion about wine evaluation according to price and labels information. These results were confirmed by the eye-tracking data collected. In fact, the average time fixation about the degree of alcohol present in the wine label for the expensive wine was for the expert consumers under 100 milliseconds, while for the non experts over 300 milliseconds. The difference was also significant (t test: $p = .0031$), which means that non experts are prone to take advantage of this information to evaluate the wine much more in comparison to expert consumers, who are not keen to consider this information as fundamental to evaluate the wine product. Instead for the cheap wine, the experts spend

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little less than 150 milliseconds of this area, while the non experts more than 250 milliseconds. The difference was not significant (t test:p = .0689). This implies that even if it is not significant, there is the tendency for non experts to dedicate more attention to the information about degree of alcohol in comparison to experts sommelier. In addition, for expensive wines, experts spent even less time on the information related to the degree of alcohol, while on the opposite, non experts spent more time on this information: the intrinsic features of wine product on one side pushed non experts to rely more on this information, while for experts intrinsic features where more than enough and there is a decrease of time fixation about this information. In terms of the cortical activity from the EEG, non experts showed an average level of stress higher than experts sommelier. Experts showed a lower level of stress than non experts, which highlights the greater difficulty of non experts to assess the wine products they are exposed to. This means that non experts, as they are not use to deal with the experimental task that requires more skills to be accomplished properly, they will look for information they can process (as the degree of alcohol) and rely more on the information they barely understand to evaluate the wine product. On the contrary, the lower EEG levels of stress showed by experts consumers reveals that they are use to deal with the experimental task, and their expertise allows to evaluate the wine product relying on other kind of information aside degree of alcohol.

5. Conclusions

This paper confirms that the relatively high complexity and perceived risk of a wine purchase give rise to a need for selecting an optimal mix of wine elements when creating marketing communications. These communication efforts should take both low- and high-knowledge consumers into account. Moreover, aside traditional questionnaire techniques that enable to identify which are the most important factors that affect wine evaluation, the contribute provided by experimental data highlights how implicit behavior detected by neuromarketing techniques might affect decision making in wine evaluation. The two approaches can successfully combined in order to create a more adequate model of consumer behavior that might allow to predict proper communication strategies. As consumers become increasingly exposed to a wider range of wines in retail outlets, wine producers need to build strategies to strengthen consumer loyalty for their brands.

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