Napping® combined with ultra-flash profiling, a quality tool in food industry. Application to Catalan and Chilean wines

Mónica Bécue-Bertaut[1], Jérôme Pagès[2]

[1]*monica.becue@upc.edu, Departamento de Estadística e Investigación Operativa, Universitat Politècnica de Catalunya, Barcelona*

[2]*jerome.pages@agrocampus-ouest.fr, Agrocampus-Ouest, Rennes*

Summary

The characterization of wines by experts requires short-time consuming hall tests procedures. Thus, holistic methods have been developed such as napping which, for each expert, collects a bi-dimensional configuration of the products in only one session. Ultra-flash profiling, a spontaneous descriptive technique, offers a complement that allows for interpreting the results.

Keywords: Sensometrícs; Ultra-flash profiling; Napping®

1. Introducción

Sensometrics refer to the discipline that defines and applies statistical methodologies in the analysis of data issued from hall tests in food industry. Among these methods, the very used conventional profiling consists of a set of expert judges scoring a series of descriptors. However, this method presents two limitations: the necessity of training sessions–difficult to perform due to the short available time of the experts– and the lack of information about the relative importance of the different descriptors. In this sense, recent methods have been developed that directly and globally collect the differences between products. Napping® [1] comes within this scope and looks for collecting global bi-dimensional configurations, one for each expert. As napping does not characterize the wines, it is completed by ultra-flash profiling, a spontaneous descriptive method.

In this work, we conjointly apply napping and ultra-flash profiling to compare Chilean and Catalan wines and thus show their potentiality in sensometric studies.

2. Data collection: napping and ultra-flash profiling

Eight red wines have been chosen by Bodegas Torres in order to respect a complete experimental design, crossing three two-levels factors: region (Chile/Catalonia), type of wine (Syrah/Merlot) and production year (2003/2004). These wines have been tasted by 21 panellists (17 professionals and 4 amateurs).

Napping consists in simultaneously proposing the eight wines to the panellists who have to lay them out on a tablecloth accordingly to their similarity. Thus, two wines are close if perceived as similar or, on the contrary, are far-off one another if perceived as different. Each expert uses his/her own criteria.

After performing the napping task, the panellists are asked to describe the wines by writing some words beside each of them (ultra-flash profiling [2]).

Napping data lead to a quantitative table. The rows are the wines. This table presents 21 sets (one set for each panellist) of two columns corresponding to the horizontal and vertical coordinate s.

Ultra-flash profiling is coded through a wines×words frequency table.

3.   Data analysis and results

First, a multiple factor analysis (MFA) [1] has been performed on the 21 napping sets; using the column-words as supplementary elements. Second, the frequency table, issued from the ultra-flash profiling, has been directly analysed by correspondence analysis (CA). Both methodologies show that the effect of the region is dominating on the effect of the type of wine, in accordance with other studies on Spanish wines such as [3]. The second analysis leads to straighter results because of clearly separating a defective wine, well described by the words associated to it. As noted in [4], the previous napping incites the panellists to select discriminating items.

4.   Acknowledgements

5.   Bibliography

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