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| **Title:** |
| Optimization of a verbal measure of emotions elicited by fragrances;  comparison between CATA (Check-All-That-Apply) and a 5-point scale. |
| **Authors & affiliations:** |
| *Christelle Porcherot\*, Dominique Valentin\*\*, Catherine Ducret\*, Orianne Grand\*\*, Charline Melis\*\*, Héloïse Vergnaud\*\*, Nadine Gaudreau\*, Isabelle Cayeux\**  *\*Firmenich SA, 1 route des Jeunes, PO Box 239, CH-1211 Geneva 8, Switzerland*  *\*\*AgroSup, 1 esplanade Erasme, 21000 Dijon, France* |
| **Abstract:** (Your abstract must use **Normal style** and must fit in this box. Your abstract should be no longer than 300 words. The box will ‘expand’ over 2 pages as you add text/diagrams into it.) |
| Measuring self-reported feelings to odors and fragrances is a challenge for the food and fragrance industry, requiring the development of appropriate tools. UniGeos is a universal tool developed to measure self-reported odor-related feelings and is the result of a cross-cultural approach (Ferdenzi et al., 2013). It consists in 25 emotional terms organized in 9 emotional categories.  This study was aimed at optimizing UniGeos tool by comparing results obtained from a 5-point scale and CATA approach (Check-All-That-Apply), to determine which was the most appropriate for measuring self reported feelings. For the CATA approach, we investigated the effect of different presentation order of feeling terms (i.e., random vs. alphabetical, similar vs. different among products, or grouped by emotional category), and the effect of a yes/no answer for each term.  Six studies were conducted with a total of 380 participants; 80 participants for the first study, 60 for the following studies, participant number being optimally reduced to 60 from a bootstrapping procedure. Subjects expressed their feelings towards 5 shampoo fragrances for each study. The results of these studies were compared in terms of subject consensus, fragrance discrimination and term frequency of use. Fragrance mappings were also compared with a MFA analysis and RV related coefficients.  RV coefficients indicated similar fragrance description amongst the six studies, the grouped terms by emotional category, the within-subject randomization and the yes/no response being closer to the 5-point scale. The within-subject randomization and the yes/no response increased fragrance discrimination. Moreover, the yes/no response significantly increased the frequency of use of feeling terms.  From these studies, we recommend to apply the CATA approach to UniGeos, which may have the advantage of more spontaneous answers compared to a scaling approach. In addition, we recommend changing term presentation order with each fragrance evaluated in order to increase subject attention during the whole experiment.  *Ferdenzi, C., et al., Affective semantic space of scents. Towards a universal scale to measure self-reported odor-related feelings. Food Quality and Preference 30 (2013) 128–138* |