

Construction of a products space based on consumers' words from the napping method

Application to the sensory evaluation of twelve luxury fragrances

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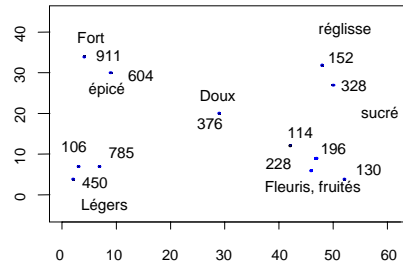
INTRODUCTION

- Usually sensory description of products requests the training of an expert panel on a specific list of descriptors
- The aim of this study is to evaluate the ability of consumers to describe the twelve fragrances [1][2] using their own words, through napping



CONSUMERS' DATA: NAPPING AND WORDS

- 99 consumers
- Spontaneous evaluation on blind coded fragrances
- 2 fragrances are close if they are perceived as similar and far if they are judged differently
- The consumer is free to describe any fragrance or group of fragrances he wants to



METHODOLOGY

Data preparation : lemmatisation and stemmatisation

- Useless words like articles and meaningless expressions are deleted
- Words with a low frequency of apparition (<3) are removed
- The words associated with a high frequency are taken into account as a single term
Example: « fruité, doux » considered as fruité-doux
- Association of words from the same family
Example: « fleuri », « fleur » put under the same key word « fleuri »
- Reduction from 325 words to 86 words

Contingency table

Product	Words		
	Word 1	Word j	Word 86
Fragrance 1			
Fragrance i		X_{ij}	
Fragrance 12			

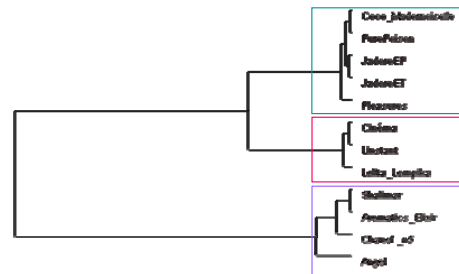
X_{ij} : number of times the word j is associated with the fragrance i

- Correspondence Analysis
- Clustering

RESULTS

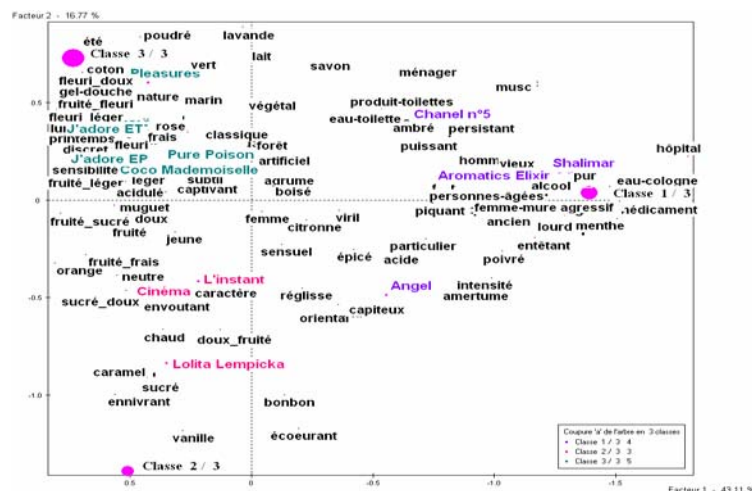
- **Cluster 1: Shalimar, Aromatics Elixir, Chanel n°5 and Angel** These fragrances are associated with words like strong, aggressive, medicine, elderly people, alcohol
- **Cluster 2: Lolita Lempicka, Cinéma, L'instant.** These fragrances are characterized with: sugar, vanilla, toffee, sweet and candy
- **Cluster 3: Pleasures, J'adore ET and EP, Pure Poison and Coco Mademoiselle** are said to be floral, fresh, fruity and light

Dendrogramm of the clustering



- One of the first association is between *J'adore ET* (eau de toilette) and *EP* (eau de parfum). It means that consumers are logical because they automatically associate these two fragrances on characterising them the same way
- We can notice that cluster 1 is really specific and different from the others

Map of the Correspondence Analysis



Comparison with expert conventional profile

- These results have been put in relation with an expert conventional profile
- Consumers rather use daily life expressions to express the same point of view as the experts'
Example: Lolita Lempicka is greedy and vanilla smelling according to the experts. Consumers express the same point of view on using « candy, toffee, sugar »

CONCLUSION

- Consumers manage to find their own words to describe the fragrances
- The products space based on consumers' words from the napping method is easy to analyse and interpret
- The words used by the consumers to describe the products conduct to the same conclusions as the ones from expert conventional profile

References:

[1]Gazano G., Ballay S., Eladan N., Sieffermann J.M. (2005). Flash Profile and fragrance research:using the words of the naive consumers to better grasp the perfume's universe In: *ESOMAR Fragrance Research Conference*, 15-17 May 2005, New York, NY.
 [2]Gazano G., Ballay S., Sieffermann J.M. (2006). Transposing fragrance olfactory research into the consumers' worlds and words. In: *24th Congress of the International Federation of Societies of Cosmetic Chemists* (October 16-19, 2006, Osaka, Japan), PD-162, 9 pp.