

Consumer segmentation and elicitation of the key drivers: a case study with apples

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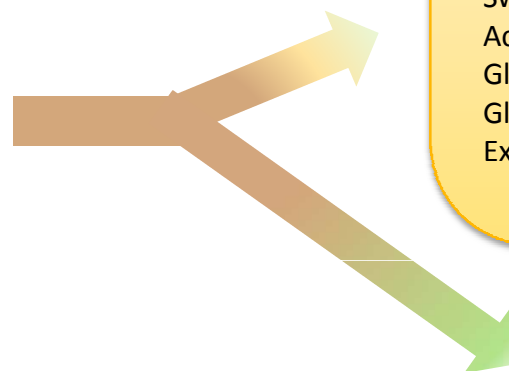
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Method

31 apples	
Pink Lady	Very acid and aromatic apples
Cox's Orange Pippin	
Reinette d'Armorique	
Dalincot	Average apples
Crimson Cripps	
Ariane2	
Dalinsweet	
Ariane	
Juliet	
Granny Smith	Very crunchy, acid and astringent apples, with lemon and green aromas
Corail® Pinova	Fondant apples
Jonagored	
Royal Gala	
Golden Delicious	
Delbard Jubilé	Rustic, little firm, fondant and/or mealy apples with wooded, mushroom, flower and green aromas
Chailleux	
Schneywell	
Reinette de Brive (Ste Germaine)	
Reinette grise du Canada	
Reinette Clocharde (Grand Champs)	
Golden de Savoie	Very sweet apples, the most aromatics (pineapple, banana, caramel/cooked sugar, flower, ripe fruits, quince and pear aromas)
Belchard Chanteclerc 2 (Deux Sèvres)	
Caméo	
Goldrush2	
Goldrush	
Tentation	
Honey Crunch	Crunchy, firm and juicy apples
Dalitron	
Jazz	
Honey Crunch2	
Fuji	



Descriptive analysis

Angers (France)

15 assessors

15 attributes

Crunchy

Juicy

Fondant

Sweet

Acid

Global aroma intensity

Global odour intensity

Exotic candy

Floral sweet

Forest floor

Rustic

Lemon

White flour

Ripe fruits

Green

Hedonic test

Angers (France)

224 consumers

Global liking



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*CLV: Clustering around Latent



Variables

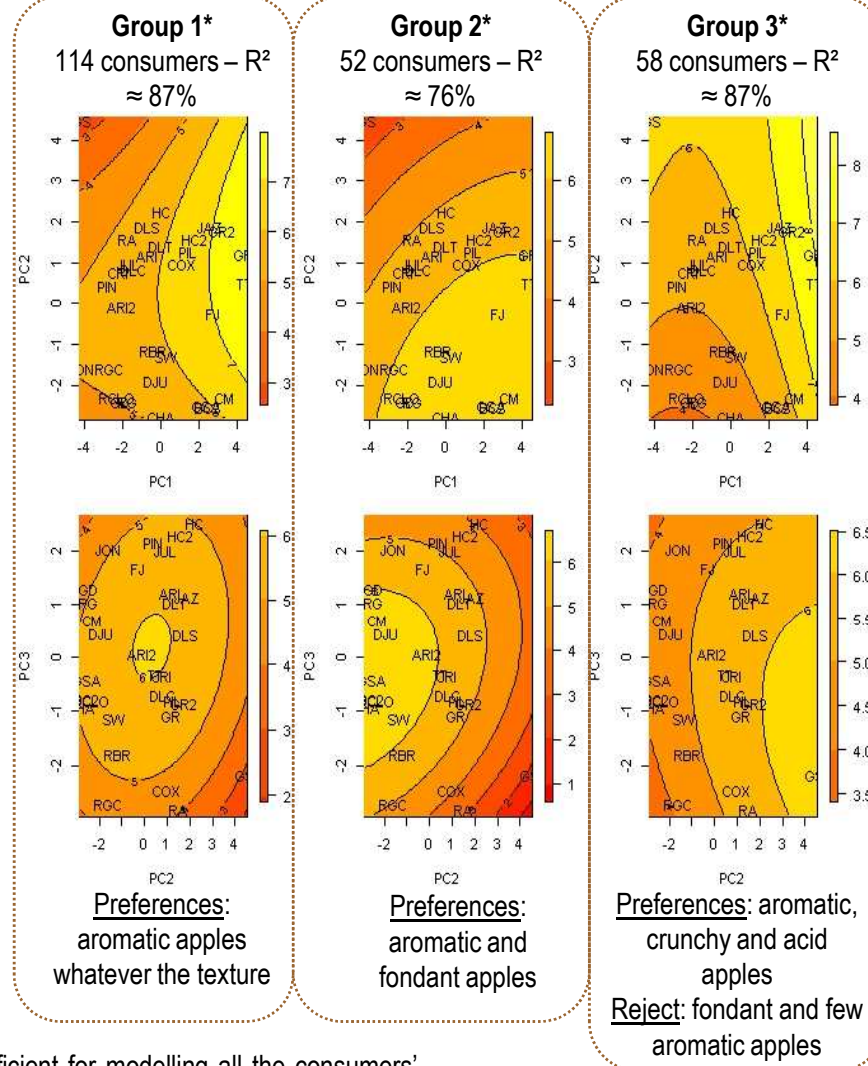
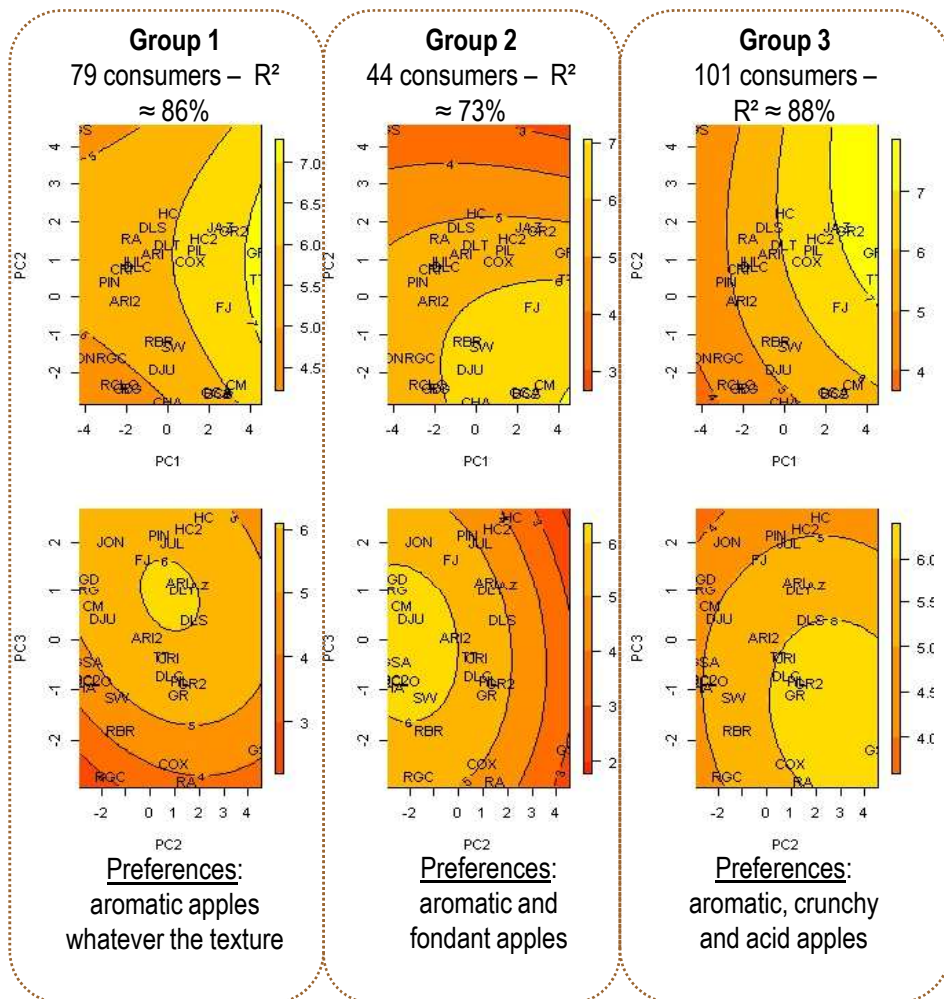
2 steps approach: segmentation (using CLV*) then modelling

1. Consumers' segmentation using liking data
→ The mean consumer of each group k is retained (y_k)
2. PCA of the sensory data (normed)
→ X : third first sensory PC extended with quadratic and interaction terms
3. Multiple regression. y_k explained by X



Integrated approach: CLV* with sensory PC as external variables

- Segmentation of the consumers according to their likings (Y) and definition of a latent variable in each group (c_k);
- c_k is a linear combination of X (extended sensory PC matrix) which explained the mean consumer in the group k .



In this study, we have seen that using a model with two sensory Principal Components (PC) was not always sufficient for modelling all the consumers' preference. The third PC has also been considered as well as quadratic and interaction terms. The two approaches of segmentation investigated gave similar results but the interpretation of the third group is slightly different.

Thanks for your attention