Ideal Profile Method: an efficient way to improve products?

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Introduction

- Getting the consumer's insight is a key element for product improvement. Everybody would like to know what is the consumer's ideal product.
- Classic method to get consumers' insight: preference mapping. *Problem: what if the ideal product is not in the product space?*
- Ideal profile method (IPM) can give us information about an ideal which would not be among the products presented to the consumer. We applied this method to moisturizing creams we formulated ourselves in order to have different types of creams and be able to reformulate new ones.

Data collection

72 women were asked to rate 8 moisturizing creams on both their perceived and ideal intensities for a list of 13 attributes. They also had to give their liking scores for each cream.

Example of question:

« Rate the smoothness of this cream and the one of your ideal cream on the following scales »

TESTED CREAM Not smooth at all ⟶ Very smooth

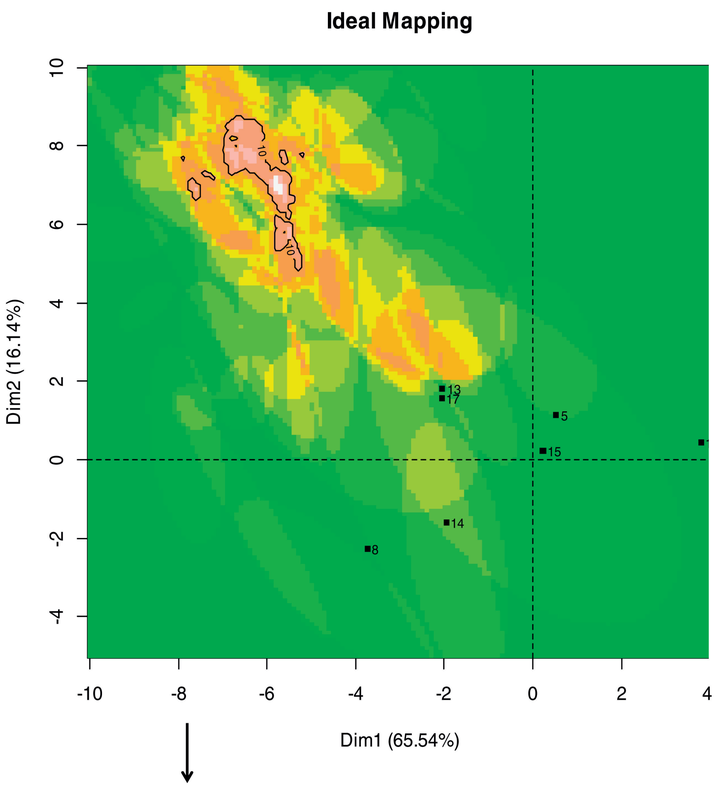
IDEAL CREAM Not smooth at all ⟶ Very smooth

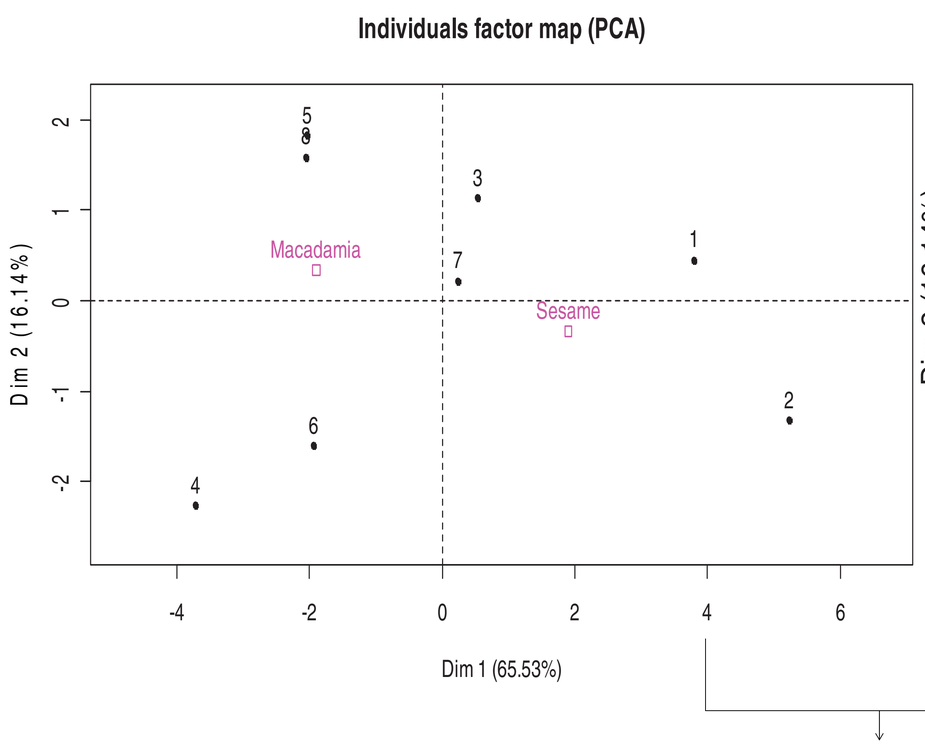
« Do you like the texture of this cream? »

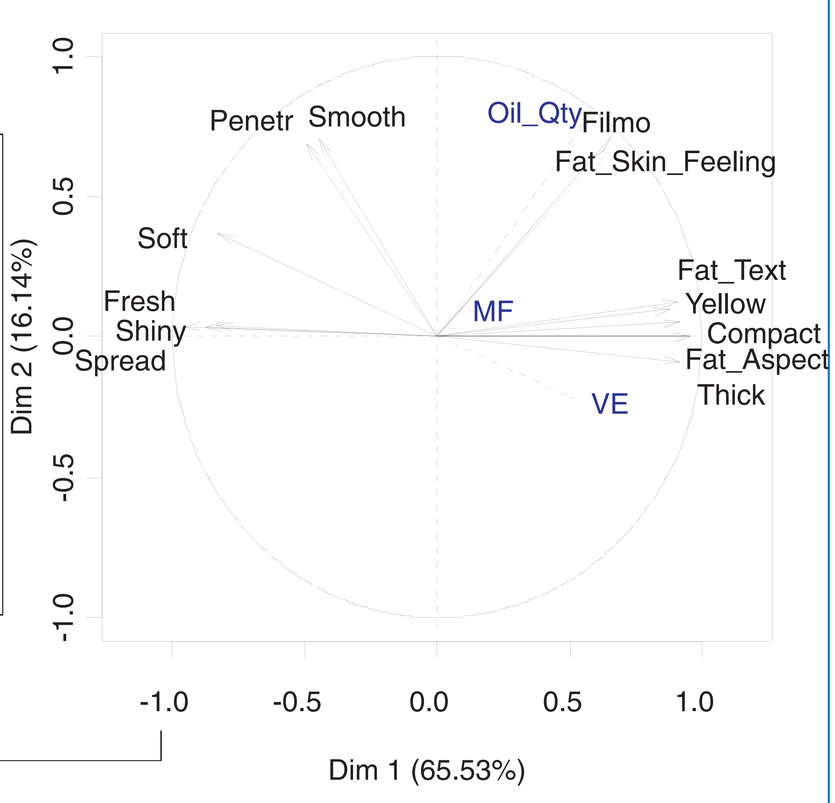
Not at all ⟶ **Very much**

Product	Judge	Att. 1	Att. 1 *Ideal*	…	Att. 13	Att. 13 *Ideal*	Liking score
1	1						
2	1						
…	1						
8	1						
	…						
1	72						
…	72						
8	72						

First session results







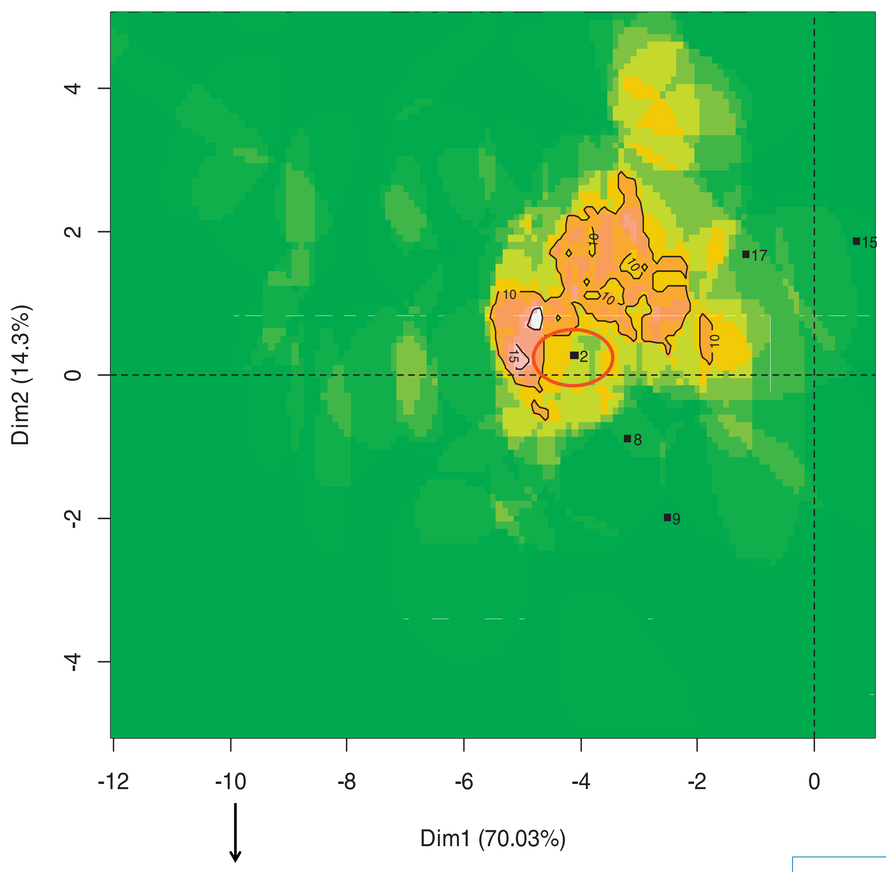
Ideal mapping shows that the ideal cream is out of the product space (red/pink zone). We would have not got this information with a preference mapping.

The ideal cream's caracteristics can be found thanks to PCA results: it seems to be a very soft and smooth cream that is also neither compact, thick nor fat. Furthermore, the ingredients are represented here as illustrative variables. The ingredients used were: two types of vegetal oil (Macadamia and Sesame), water, co-emulsifiers VE and MF. By changing quantities for each ingredient in the different recipes, different types of cream were obtained.

➔ Knowing these characteristics and the hypothetic recipe but also thanks to a good product knowledge, it is possible to formulate this hypotetic ideal product and have it tested during a second session.

Second session results

The same judges were asked to come back for a second session where they had to rate 8 creams following the same protocol than the first time. Among these 8 creams, there were two reformulated « ideal » creams: cream 2 and 9.



The ideal is now close to cream 2 which is one of the cream reformulated thanks to the results of the first session.

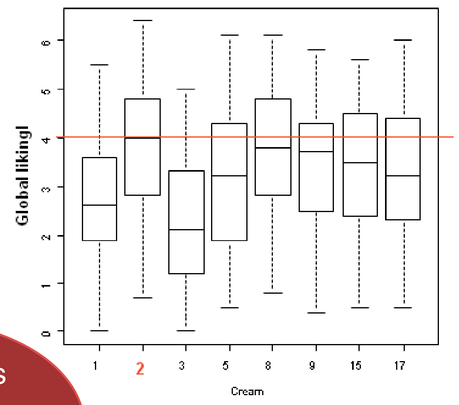
Analysis of variance and boxplot: which cream is preferred by the consumers?

Results of the function aov.sum :

Model: **Global_liking** ~ Cream + Judge

	SS	df	MS	F value	Pr(>F)
Cream	102,09	7	14,5847	8,4677	$9,56.10^{-10}$
Judge	162,18	64	2,5341	1,4713	0,014
Residuals	771,63	448	1,7224		

Cream	Coeff.	P-value
2	0,49	$1,33.10^{-3}$
8	0,41	$6,72.10^{-3}$
1	-0,49	$1,24.10^{-3}$
3	-0,90	$5,86.10^{-9}$
9	0,21	0,15
15	0,19	0,2
17	0,09	0,5
5	-0,02	0,89



Cream 2 was significantly preferred by the entire panel

Conclusion:
This experiment showed that IPM enables new product development possibilities as it can reach products out a product space and target precisely an ideal product which is in fact a fictive product.