



Where
consumer and
product meet

Can consumers express their needs?

Use of Ideal Profiles to understand and validate what is in the consumer's mind.

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SOCIETY OF
SENSORY
PROFESSIONALS

introduction

- product development and consumers
 - understand characteristics important to the consumers
 - consumers are the ultimate deciders of marketplace success
 - help to improve the actual products
- developing an ideal product for a target consumer is critical
 - estimated through statistical methods:
 - PrefMap (external preference mapping) or Unfolding
 - measured during the data collection:
 - JAR or Ideal Profile method

measurement of the ideal

- the Ideal Profile Method (IPM)
 - as opposed to JAR, consumers rate their ideal explicitly
 - every time they are asked to rate the perceived intensity of an attribute, they are also asked to rate the intensity of that attribute, if it was ideal
 - P actual products tested will yield P ideal products per consumer
- comparison of the information from different methods (*van Trijp et al., 2007*)

	PrefMap	JAR	IPM
Liking	<i>measured</i>	<i>measured</i>	<i>measured</i>
Attribute perception	<i>measured</i>	<i>N.A.</i>	<i>measured</i>
Attribute ideal point	<i>calculated</i>	<i>N.A.</i>	<i>measured</i>
Attribute deviation	<i>calculated</i>	<i>measured</i>	<i>calculated</i>

measurement of the ideal

the bitter taste



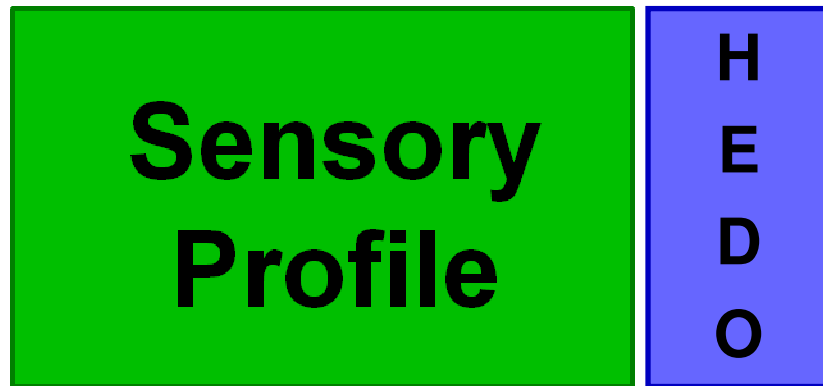
your ideal bitter taste



Next >>

the Ideal Profile data

CONSUMER j



**Before using the Ideal Profile data to improve the actual product,
we need to validate this type of data!**

the Ideal Profile data

1. Are the consumers able to describe their ideal correctly ?
 - are the ideal descriptions meaningful or random?
 - internal validation (Worch et al., 2010b)

2. Are the consumers consistent in their descriptions?
 - are the ideal products described by consumers “potential ideals”?
 - are the ideals in accordance with the other descriptions of the actual products?
 - external validation

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dataset used for illustration

- 12 + 2 luxurious women perfumes
- 103 Dutch consumers, who are users of the products
- 21 attributes rated on an unstructured 100-point scale
 - both the perceived and ideal intensities have been described every time
- description of the overall liking on a structured 9-point scale
- the products were tested during two one-hour sessions
 - 7 products being evaluated in each session

the Ideal Profile data

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➤ are the ideal descriptions meaningful or random?

- internal validation (Worch et al., 2010b)

2. Are the consumers consistent in their descriptions?

➤ **are the ideal products described by consumers “potential ideals”?**

➤ are the ideals in accordance with the other descriptions of the actual products?

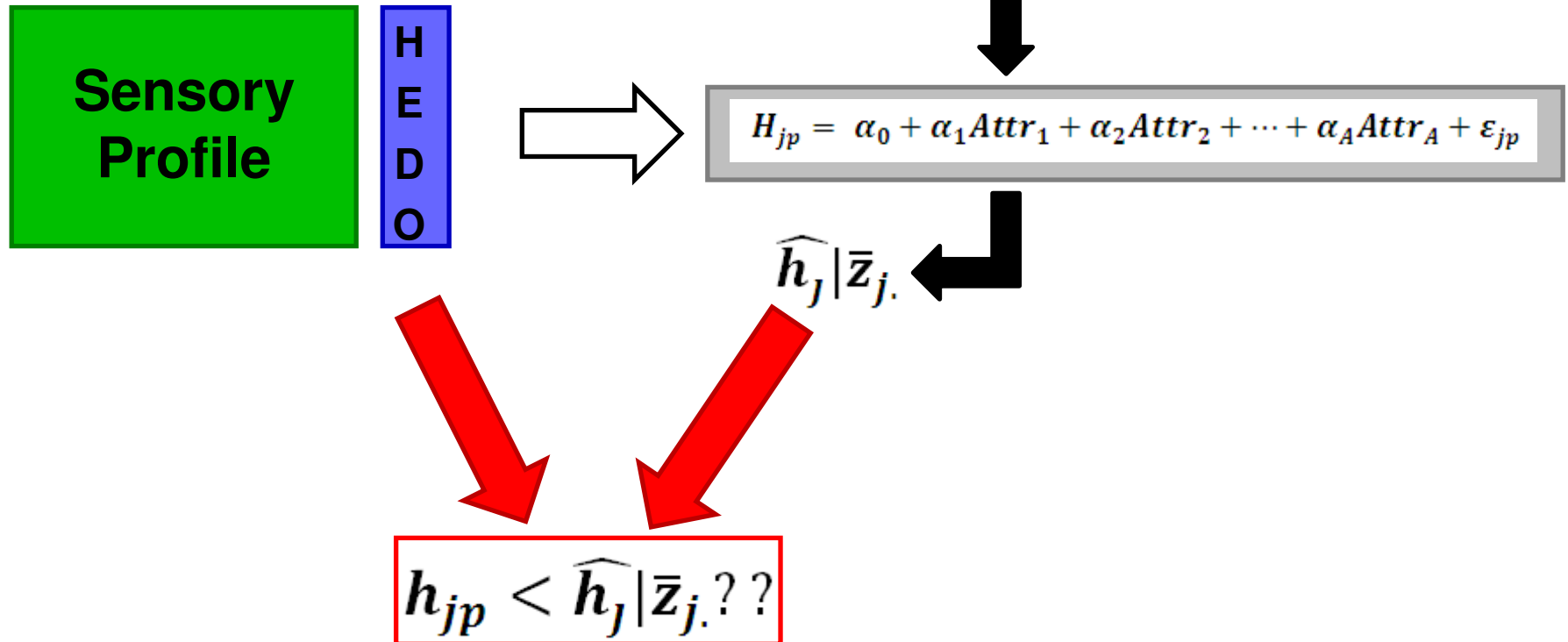
- external validation

potential ideals

- what is a “potential ideal”?
 - if, for a given consumer, we can create exactly his ideal, he should appreciate it more than the actual products
 - in other words, the ideal product described should have a stronger “liking power” than the actual products
- how can we measure it?
 - for each consumer, an individual model expressing his liking in function of the perceived intensities is estimated (*PLS regression*)
 - we apply the ideal descriptions to the individual model
 - we estimate the liking of the ideal product for each consumer

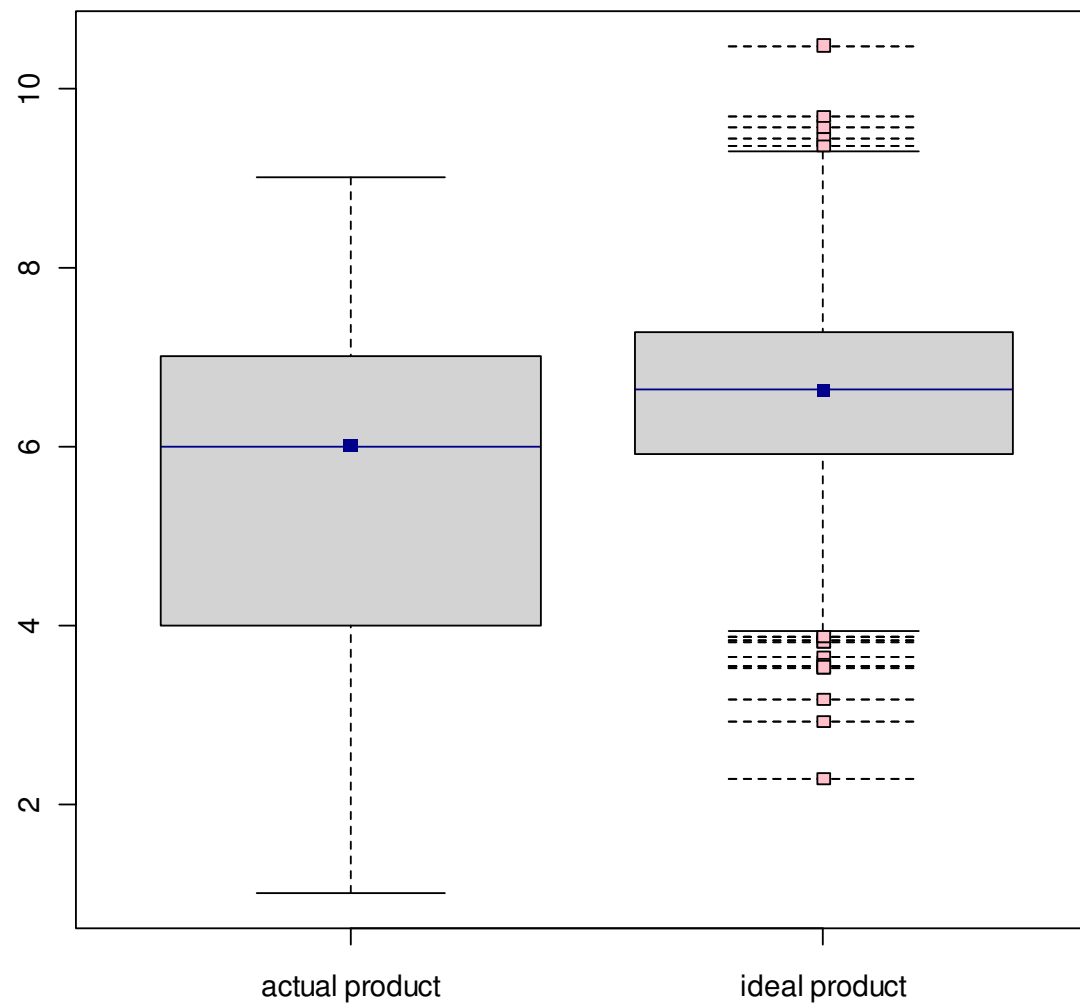
potential ideals

CONSUMER j



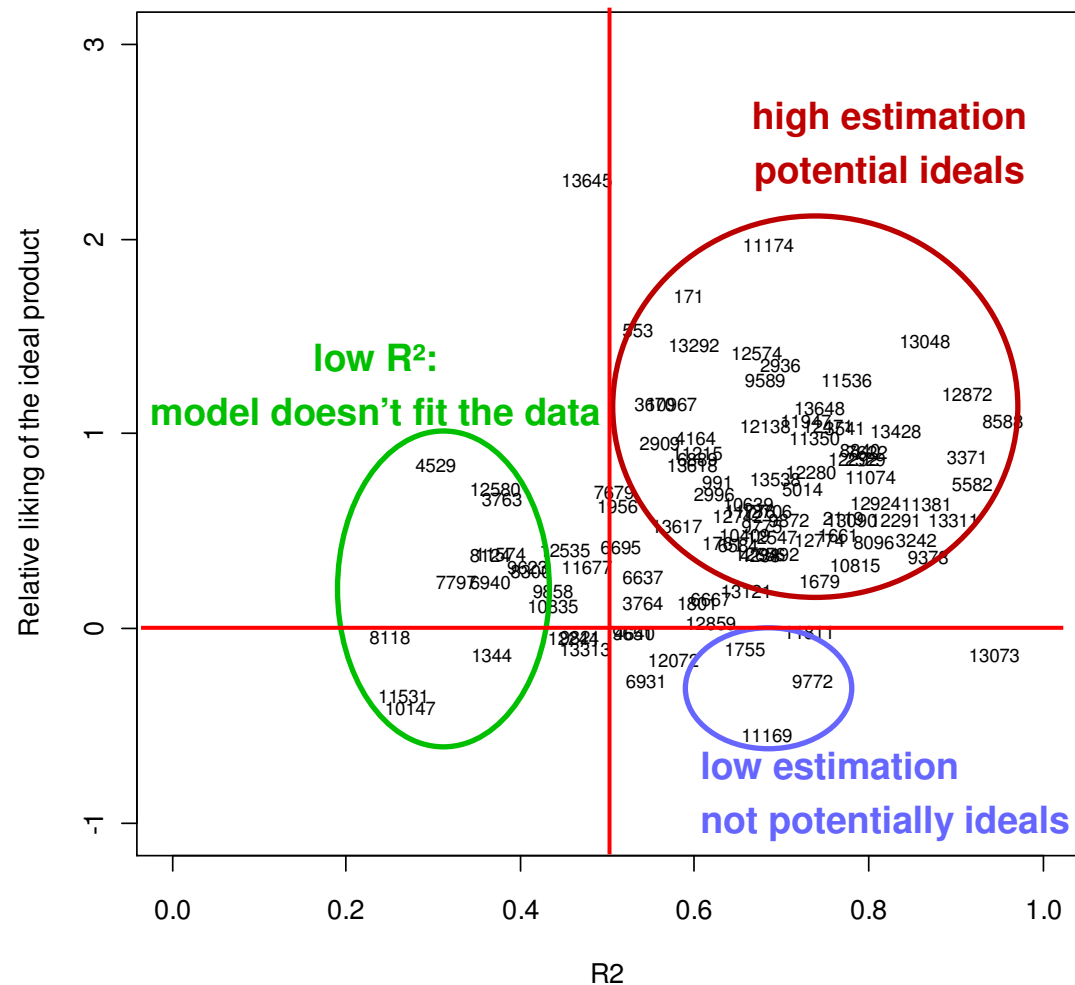
potential ideals (globally)

distribution of the liking ratings



potential ideals (individually)

Standardized liking of the ideal product
in function of the quality of the individual model



potential ideals

- the consistency in terms of “potential in liking” of the ideal descriptions is globally good
 - the distribution of the ideal estimations is on the high part of the liking scale
 - for the majority of the consumers, the (relative to hedonic scores) estimations are positive and high
- still, for some consumers, it is not the case:
 - the model doesn't fit the data (low R^2) → no conclusions about the ideal description can be drawn
 - the model fits the data (high R^2) → the ideal description doesn't coincide with ideal product

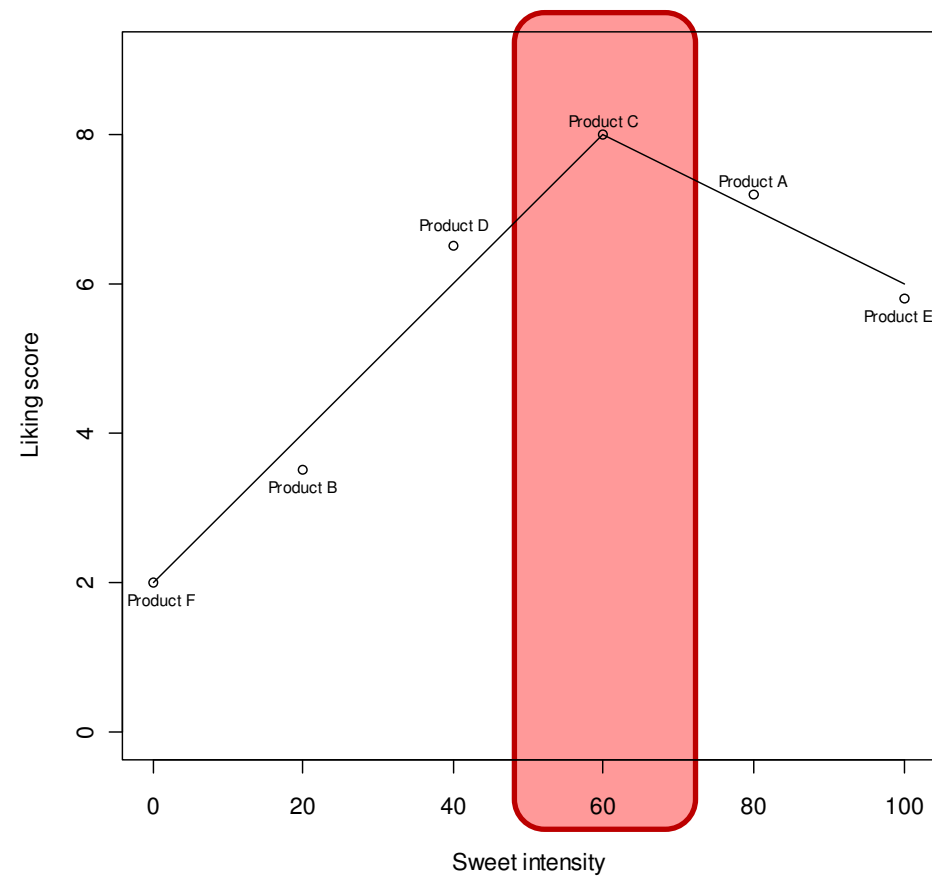
the Ideal Profile data

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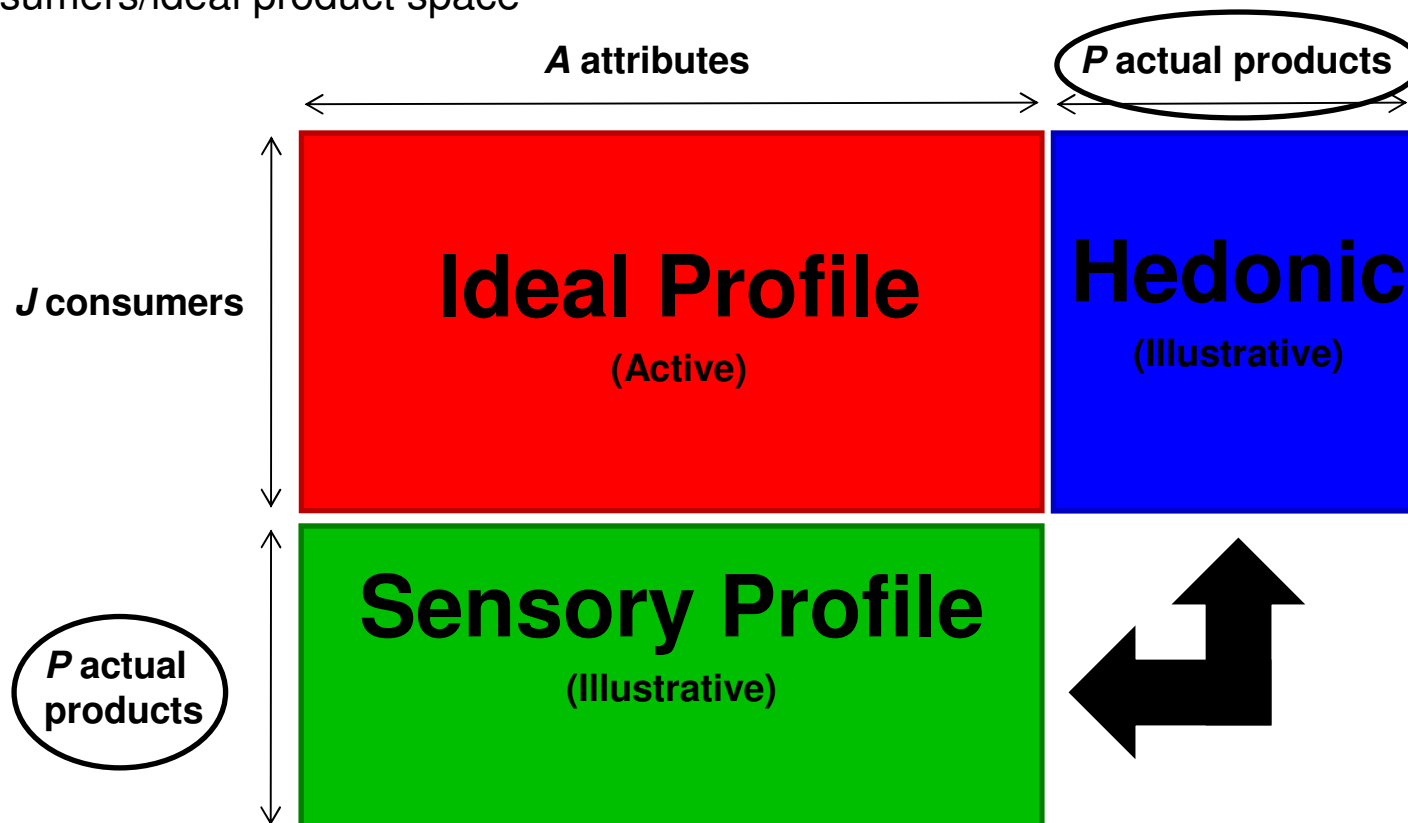
consistency of the data

- what is consistency?
 - consumers, who preferred the products they perceived as sweeter, should described their ideals as rather sweet

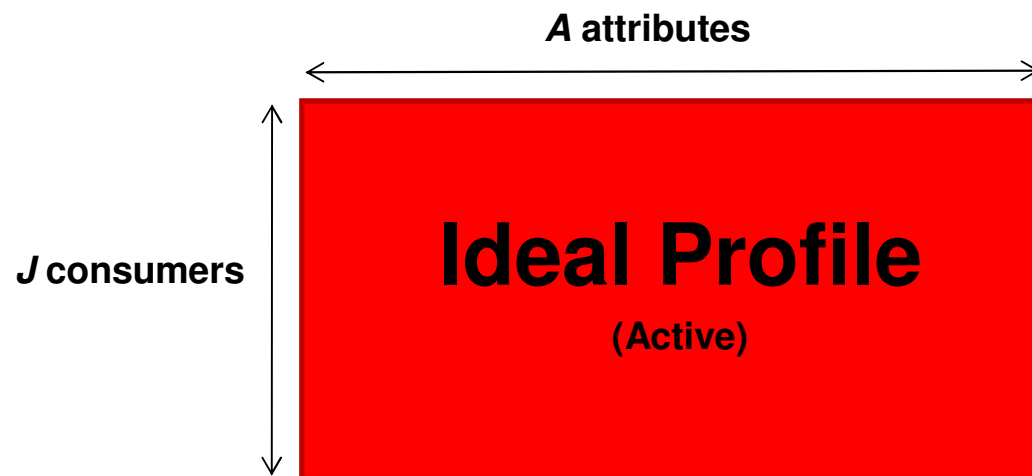


consistency of the data

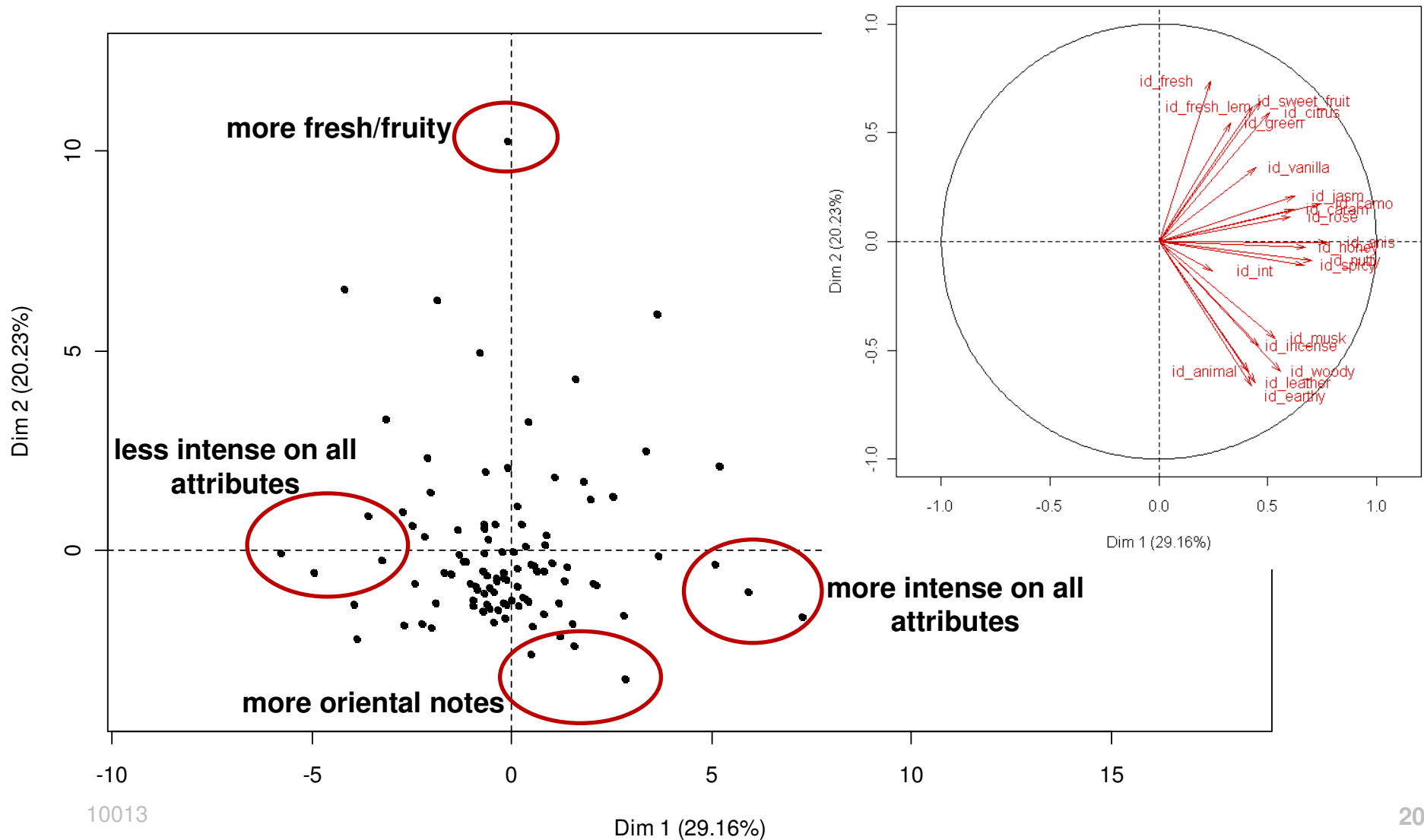
- how to check for consistency?
 - the ideal is making the link between sensory and hedonic
 - investigate the relationship between hedonic data and sensory profile, within the consumers/ideal product space



consistency of the data



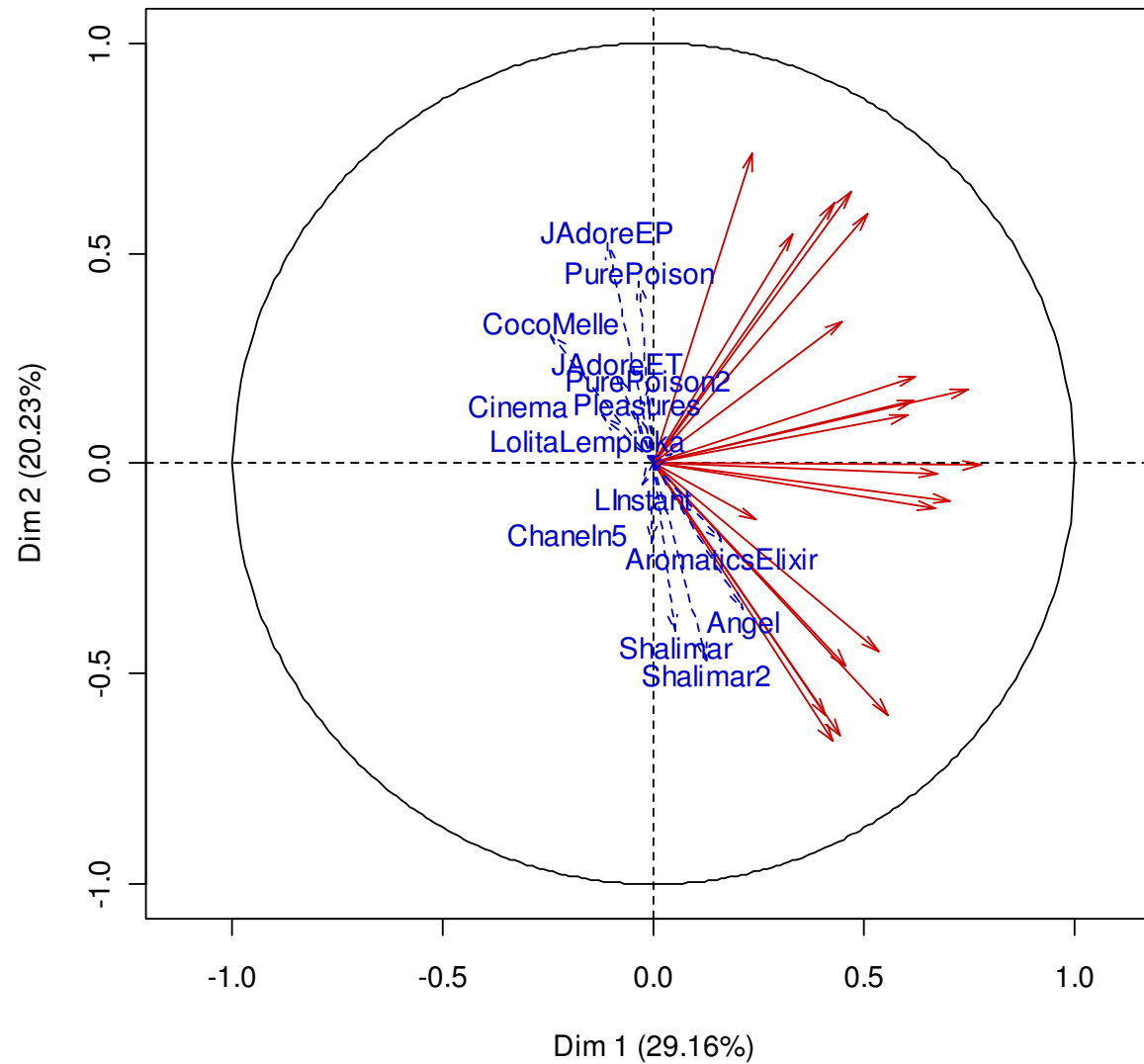
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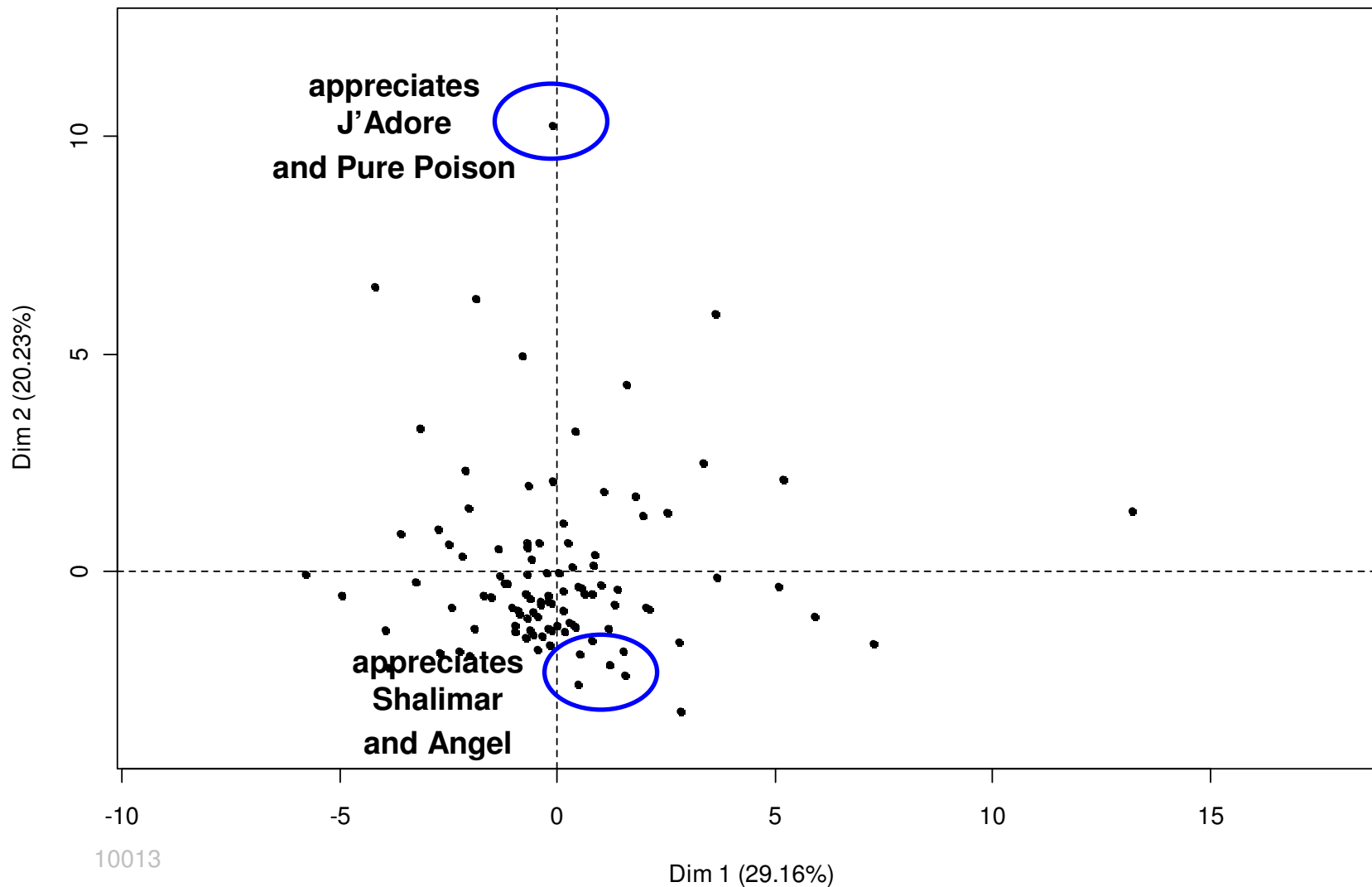
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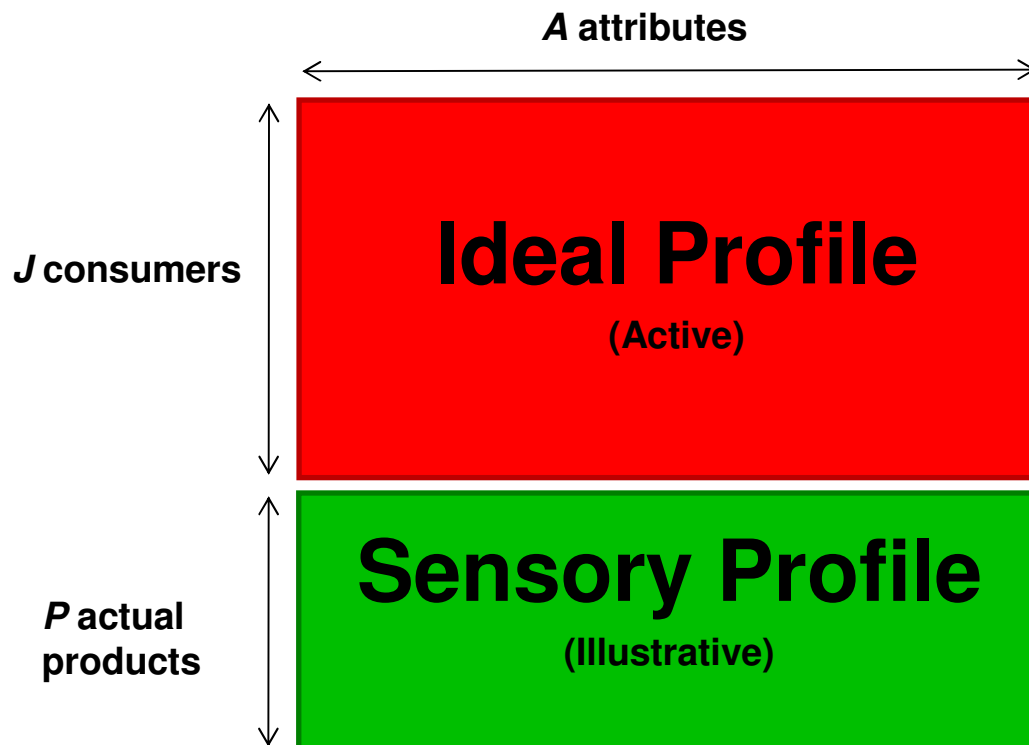
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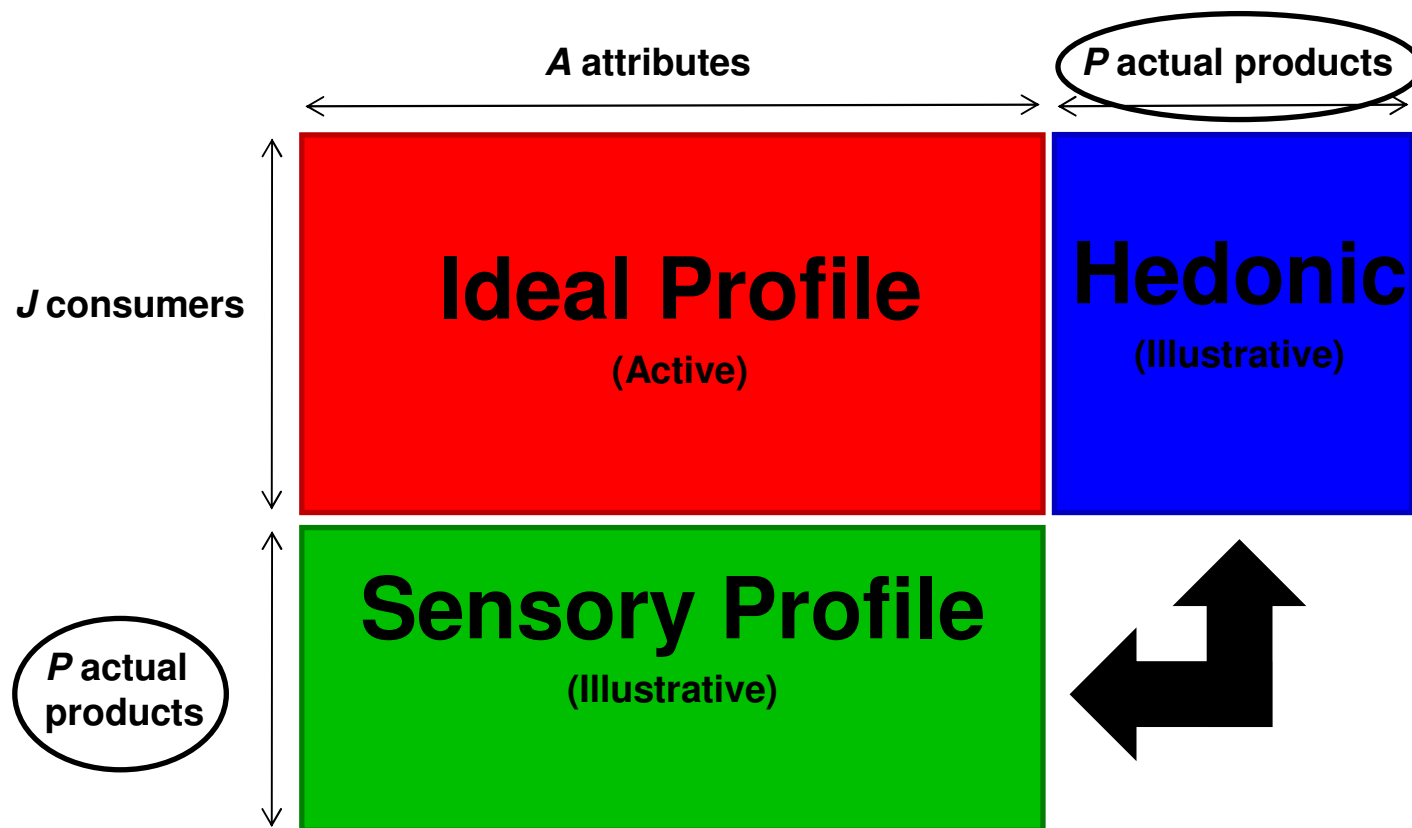
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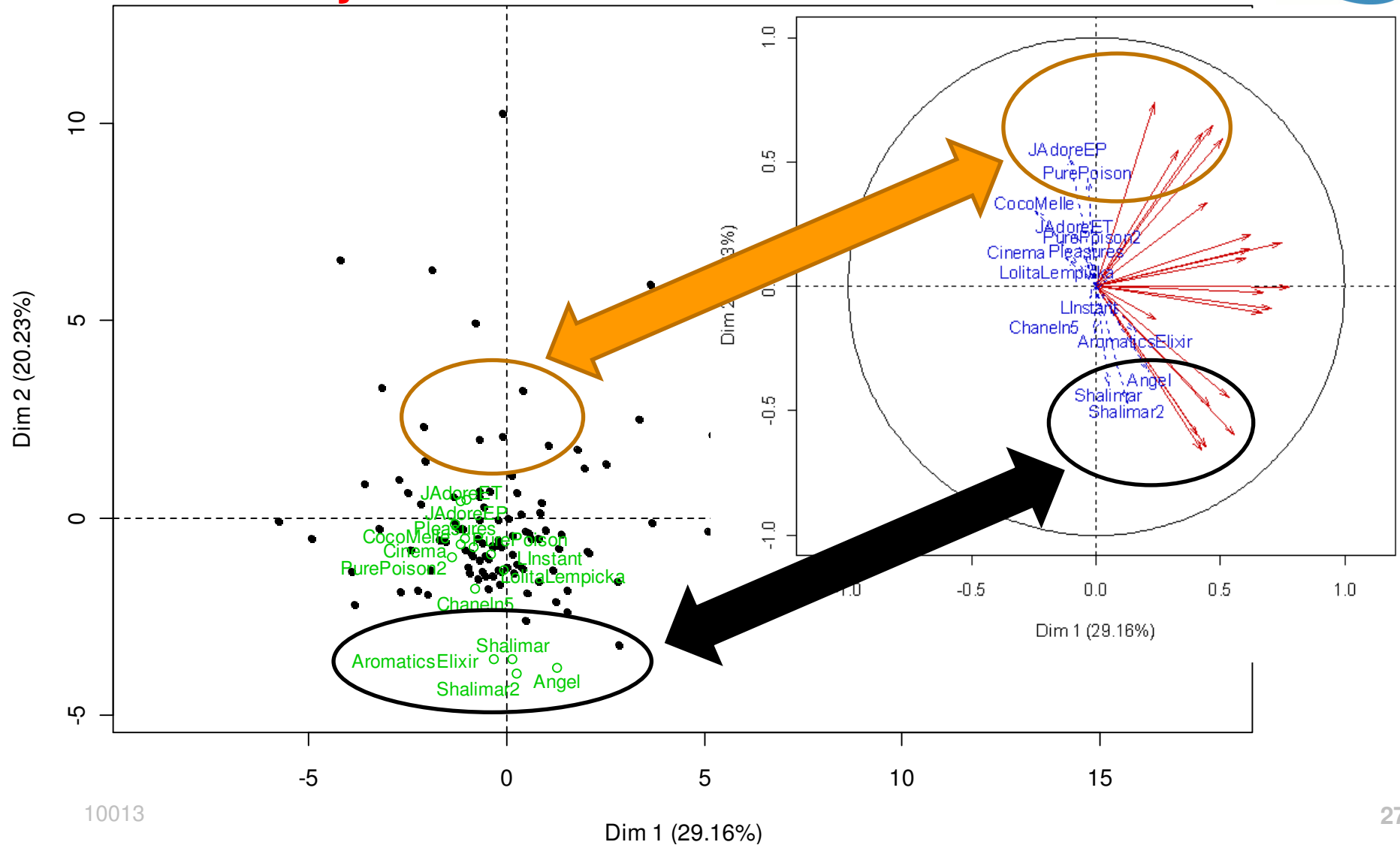
the actual product p is considered as a particular consumer who would have the product p as ideal

A PCA plot showing the relationship between two principal components, Dim 1 (29.16%) on the x-axis and Dim 2 (20.23%) on the y-axis. The plot displays numerous data points, with two specific clusters highlighted by green ellipses. The first cluster, located in the upper-left quadrant, contains points labeled with fragrance names such as J'Adore ET, J'Adore EP, J'Adore, Cinema, PurePoison2, ChanelN5, and Aromatics. The second cluster, located in the lower-right quadrant, contains points labeled with Shalimar, Elixir, Shalimar2, and Angel. The plot also includes a dashed horizontal line at Dim 2 = 0 and a dashed vertical line at Dim 1 = 0. A red point is visible at the top left of the plot, outside the main cluster of points.

consistency of the data



consistency of the data



consistency of the data

- the strong link between the configurations, and especially between the sensory profiles and the liking within the ideal space, shows that the data are consistent
 - when a consumer has an ideal close to an actual product, he also tells that he appreciates this actual product more than the others

general conclusions

- Ideal Profiles can be a difficult task for consumers, but still:
 - the majority of them is able to describe their ideals
 - the ideal descriptions coincide with ideal products (the ideal descriptions are potentially ideals)
 - the ideals are consistent with other descriptions (sensory and liking) of the products
- all these statements validate the description of ideals by consumers
 - with the advantage that, for each consumer, each product and each attribute, the exact difference between the perceived and the ideal intensities is known
- and ideal descriptions can help improving the actual products
 - Worch et al. (2010a) compared two methodologies on how to use these data in order to improve the products
 - van Trijp et al. (2007) showed that ideals from PrefMap, JAR and IPM would give the same improvement advices

references

- Van Trijp, H.C.M., Punter, P.H., Mickartz, F., & Kruithof, L. (2007). The quest for the ideal product: Comparing different methods and approaches. *Food Quality and Preference*, 18, 729-740
- Worch, T., Dooley, L., Meullenet, J.F., & Punter, P.H. (2010a). Comparison of PLS dummy variables and Fishbone method to determine optimal product characteristics from ideal profiles. *Food Quality and Preference*, in press (8th Pangborn special issue).
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THANK YOU

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