PRODUCT RESEARCH

AGRO CAMPUS OUEST

# Where consumer and product meet

# Can we trust consumers' ideal?
## Study of the relationship between the consumers' preference and their ideals.

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THE SENSOMETRIC SOCIETY

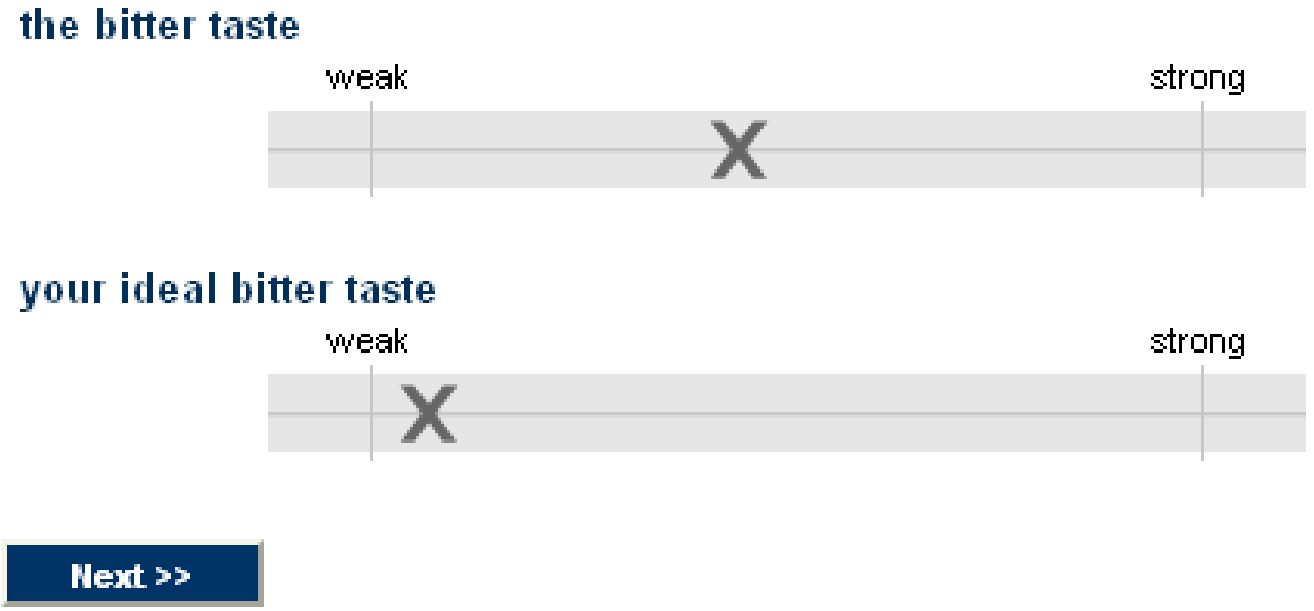
# introduction

- product development and consumers
  - understand characteristics important to the consumer
  - consumers are the ultimate decider of marketplace success
  - help to improve the actual products

- developing an ideal product for a target consumer is critical
  - estimation through statistical methods:
    - external preference mapping
  - data collection methods:
    - JAR or Ideal Profile method

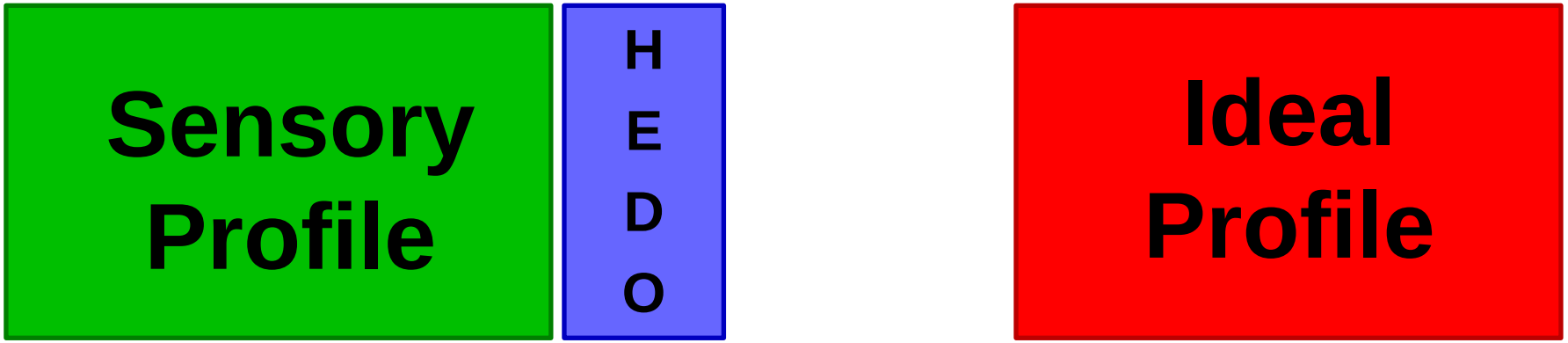
# measurements of the ideal

- the Ideal Profile Method
  - 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



## the Ideal Profile data

**consumer j**



# the Ideal Profile data

1. Are the consumers able to describe their ideal correctly ?
   - is the ideal meaningful or random?
   - internal validation

2. Are the consumers consistent in their descriptions?
   - are the ideals in accordance with the perception and the ideal description?
   - consistency between ideal, sensory description and hedonic data

3. Are the ideal products described by consumers “potential ideals”?
   - would the ideal product be more appreciated than the actual products?
   - estimation of the “liking potential” of the ideal products

# dataset used for illustration

- 12 + 2 luxurious women perfumes
- 103 Dutch consumers, who were 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

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# meaningful or random?

- the idea here is to check that the ideal data provided by a consumer *j* is meaningful

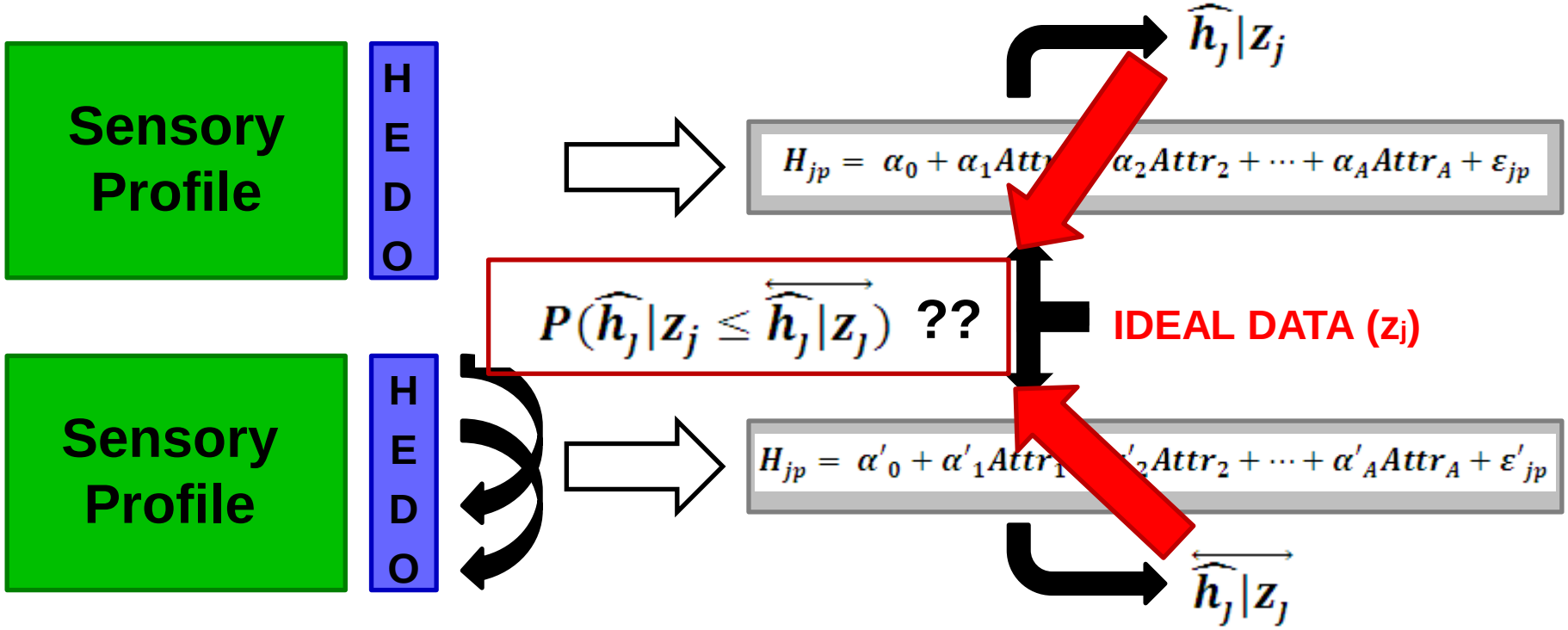
- to do so, we can check that the ideal product has a higher prediction in liking in the original case than in a random situation

- internal validation:
  - we look at the difference between prediction of liking in the original situation and in the particular situation when consumers would score the liking randomly
  - we compare the two results by expecting to have a higher liking in the original situation
  - we count (in percentage) how many times it isn't the case and estimate the a p-value associated to $\widehat{h_j|z_j}$

$$P(\widehat{h_j|z_j} \leq \overleftarrow{\widehat{h_j|z_j}})$$

# meaningful or random?

**CONSUMER j**



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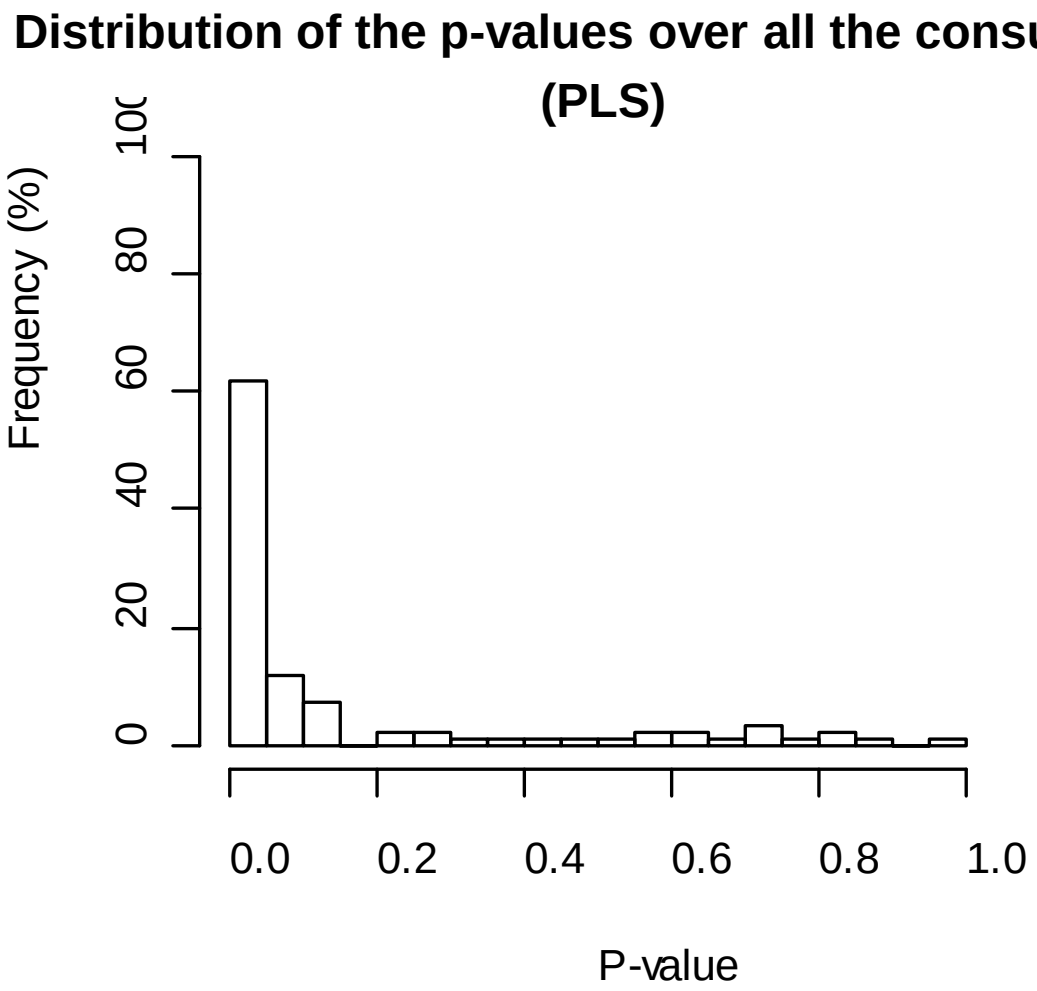


# meaningful or random?

- the results are globally promising:
  - for most consumers, the liking of the ideal is higher than the one obtained after permutation (a lot of significant p-values are observed)

- the hypothesis that the ideal products are not random values is accepted

1. Internal validation of ideal data
   - are the consumers able to describe their ideal correctly ?
   - is the ideal given by a consumer meaningful? Is it the results of “random click”?

2. Consistency between ideal, sensory description and hedonic data
   - are the consumers consistent in their descriptions?
   - are the descriptions of the ideals in accordance with their perception/liking?

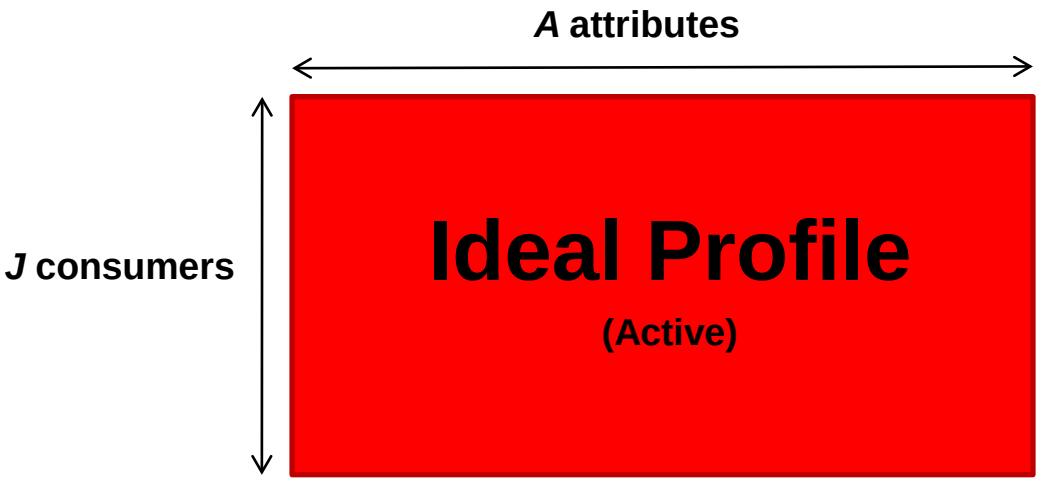
3. Estimation of the “liking potential” of the ideal products
   - are the ideal products described by consumers “potential ideals”?
   - would the ideal products be more appreciated than the actual products?

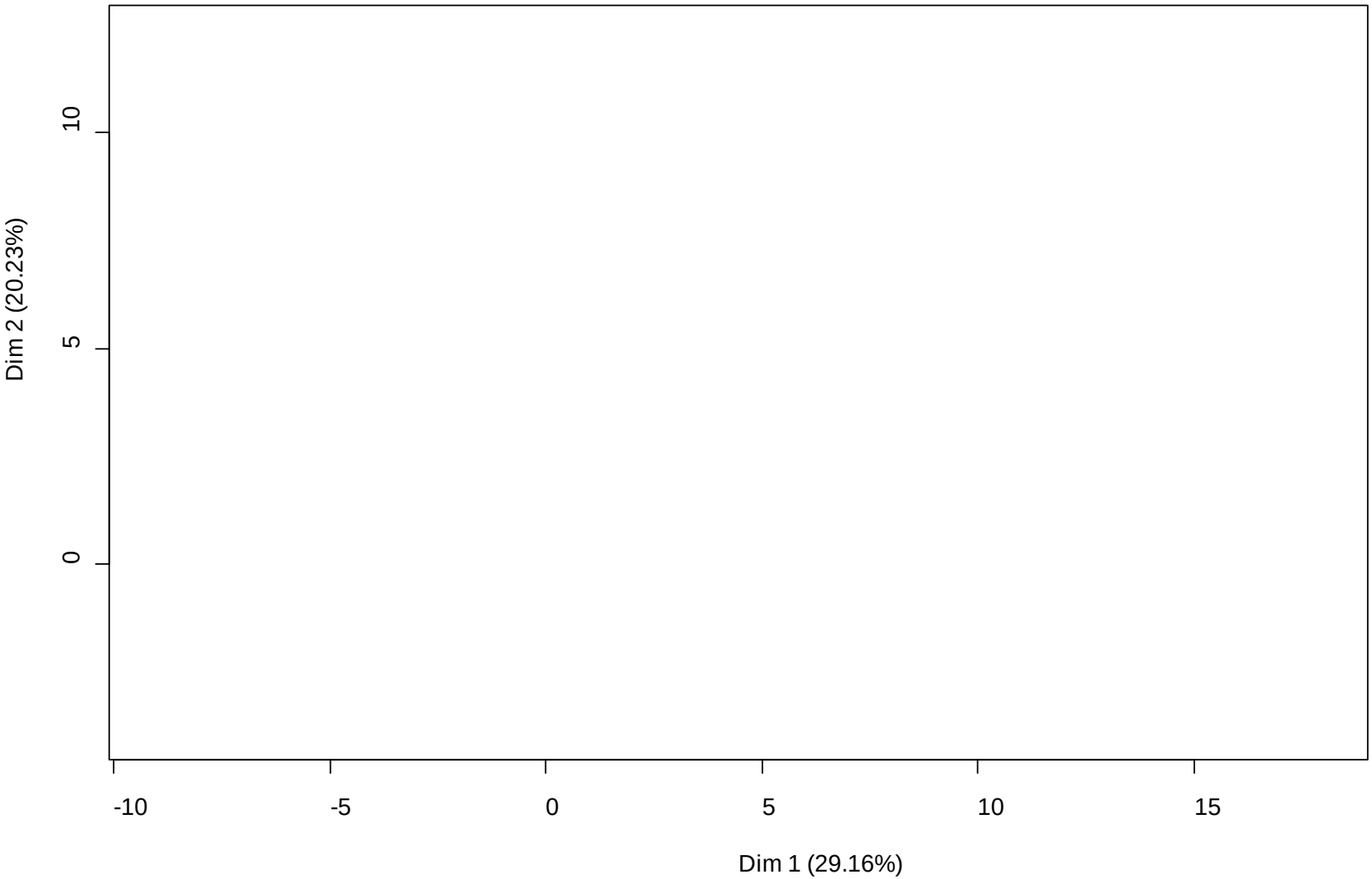
# consistency of the data

- what is consistency?
  - for consumers with higher appreciation for the products they perceived as sweeter, the ideal should be described as rather sweet

- how to check for consistency?
  - looking for consistency lies in the study of the relationship between hedonic data and sensory profile, within the ideal product space
  - it is an indirect demonstration, as it needs to study more deeply the relationship between pairs of table
    - ideal and hedonic
    - ideal and sensory
    - hedonic and sensory

# consistency of the data




Dim 2 (20.23%)
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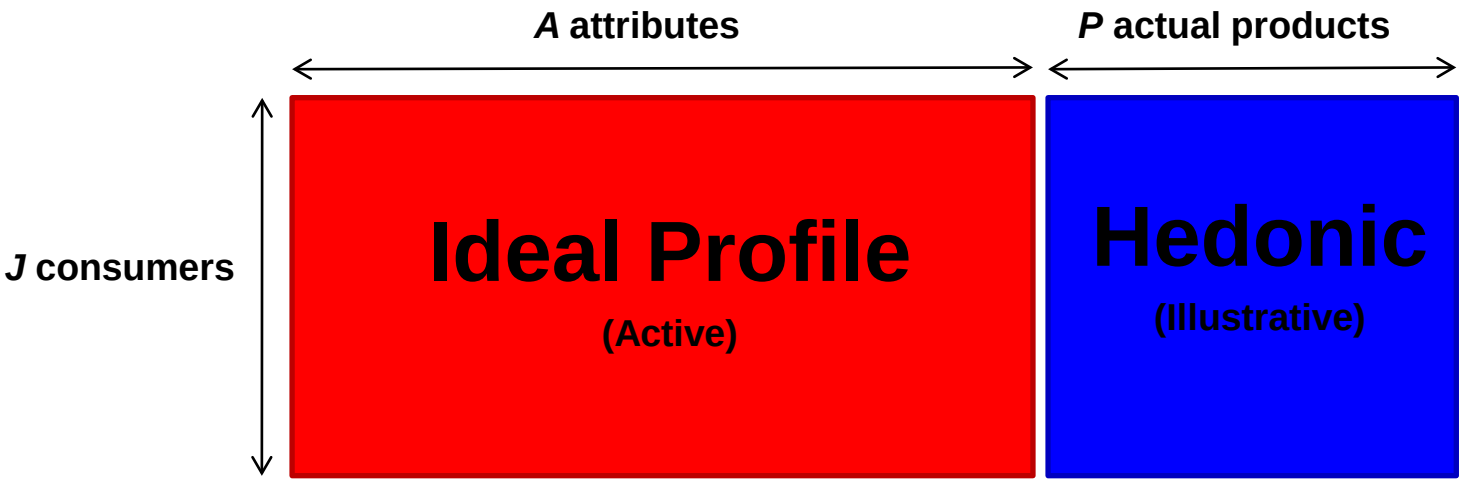
-10
-5
0
5
10
15
Dim 1 (29.16%)

# consistency of the data



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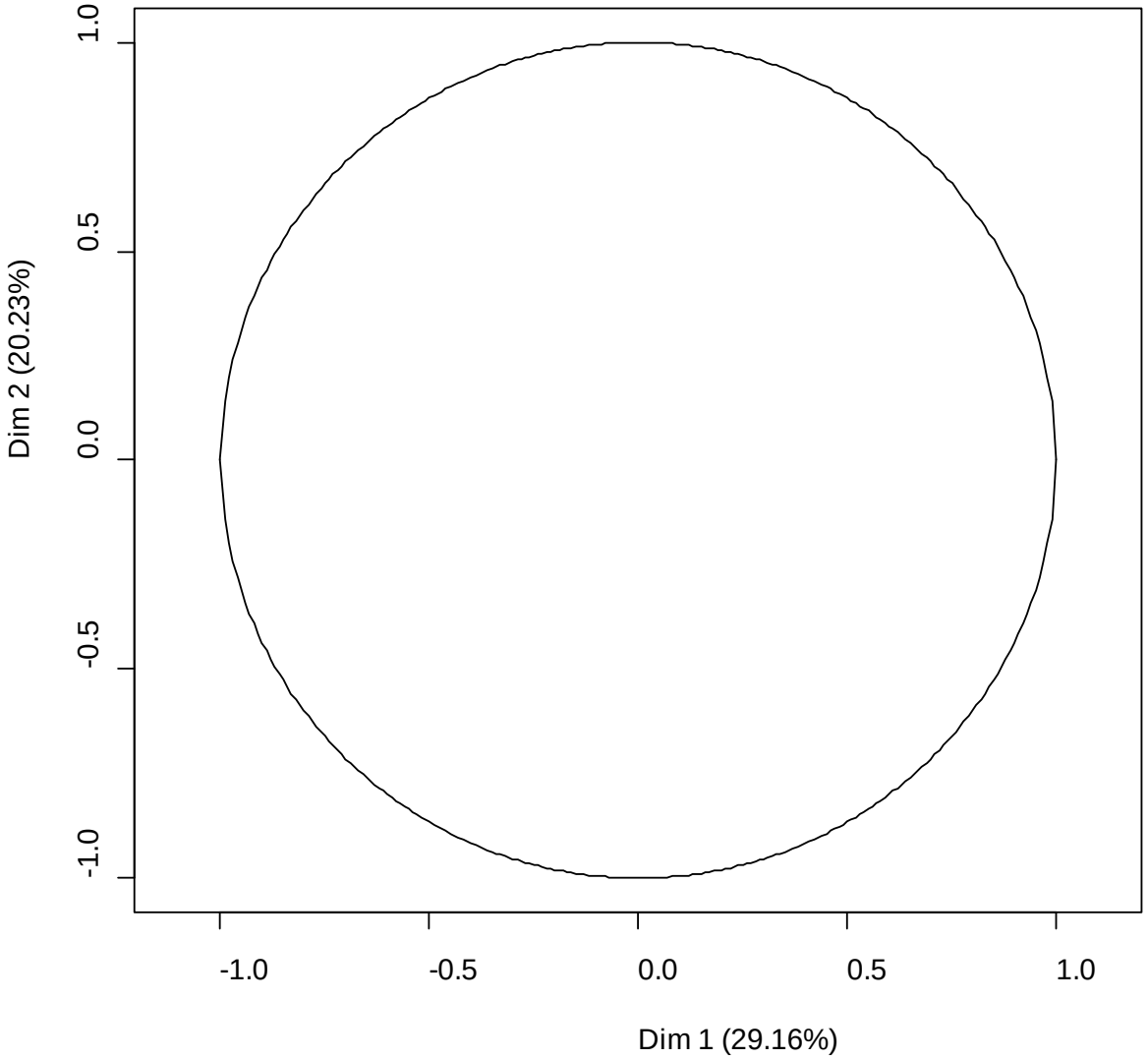

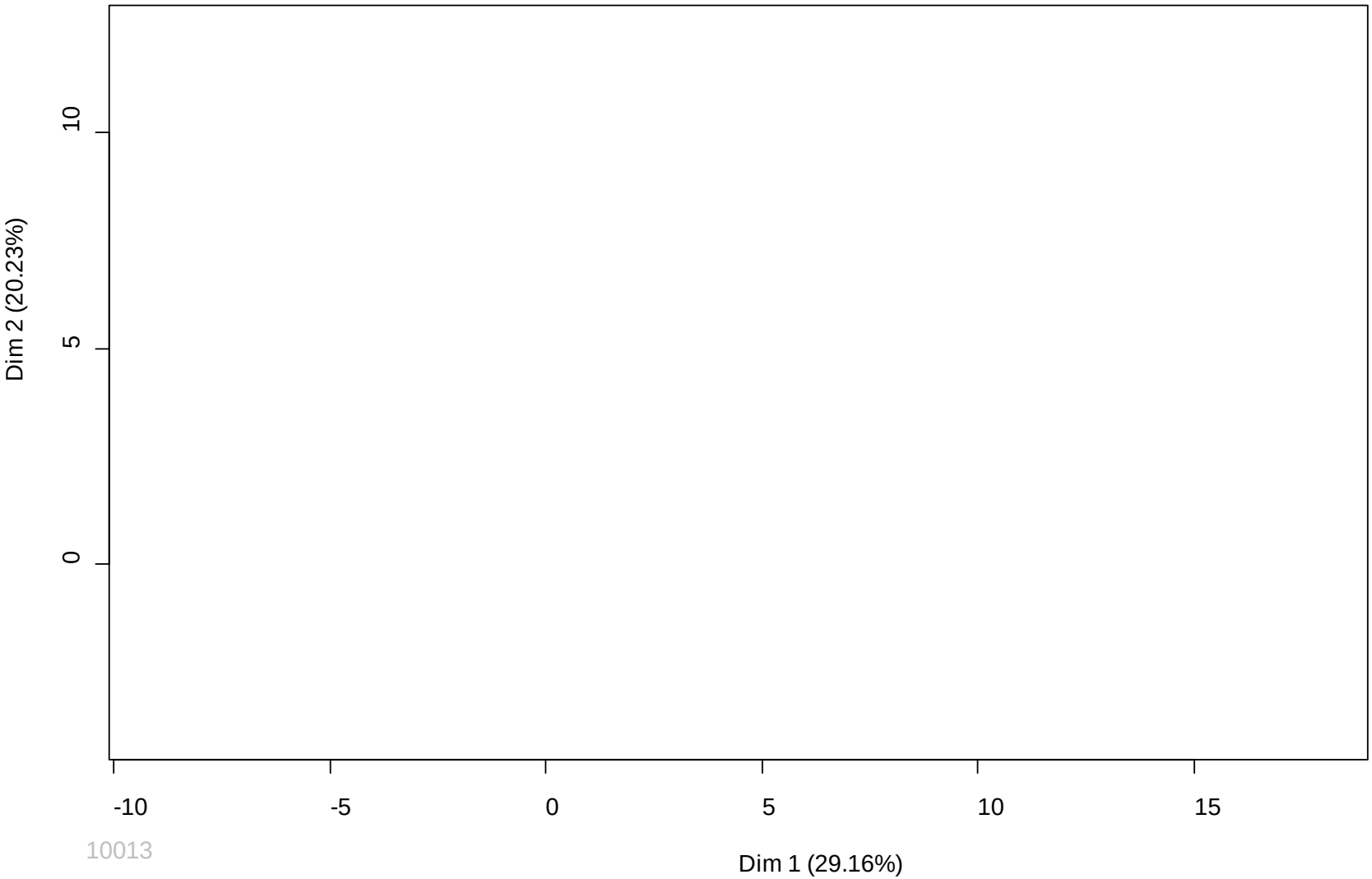
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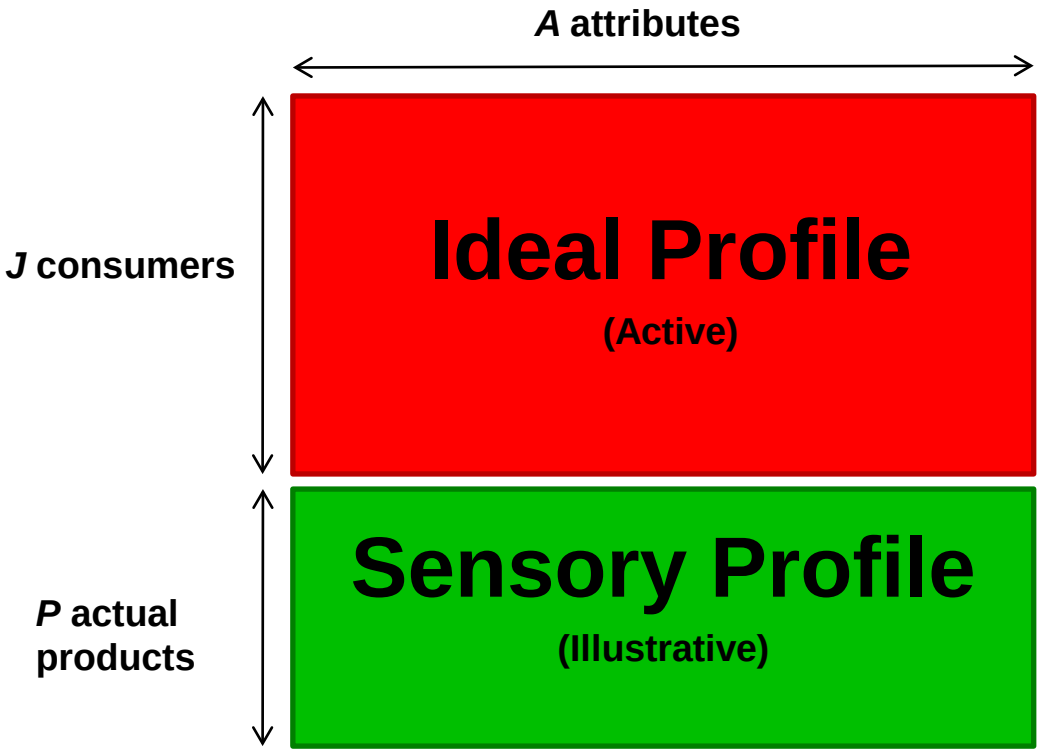
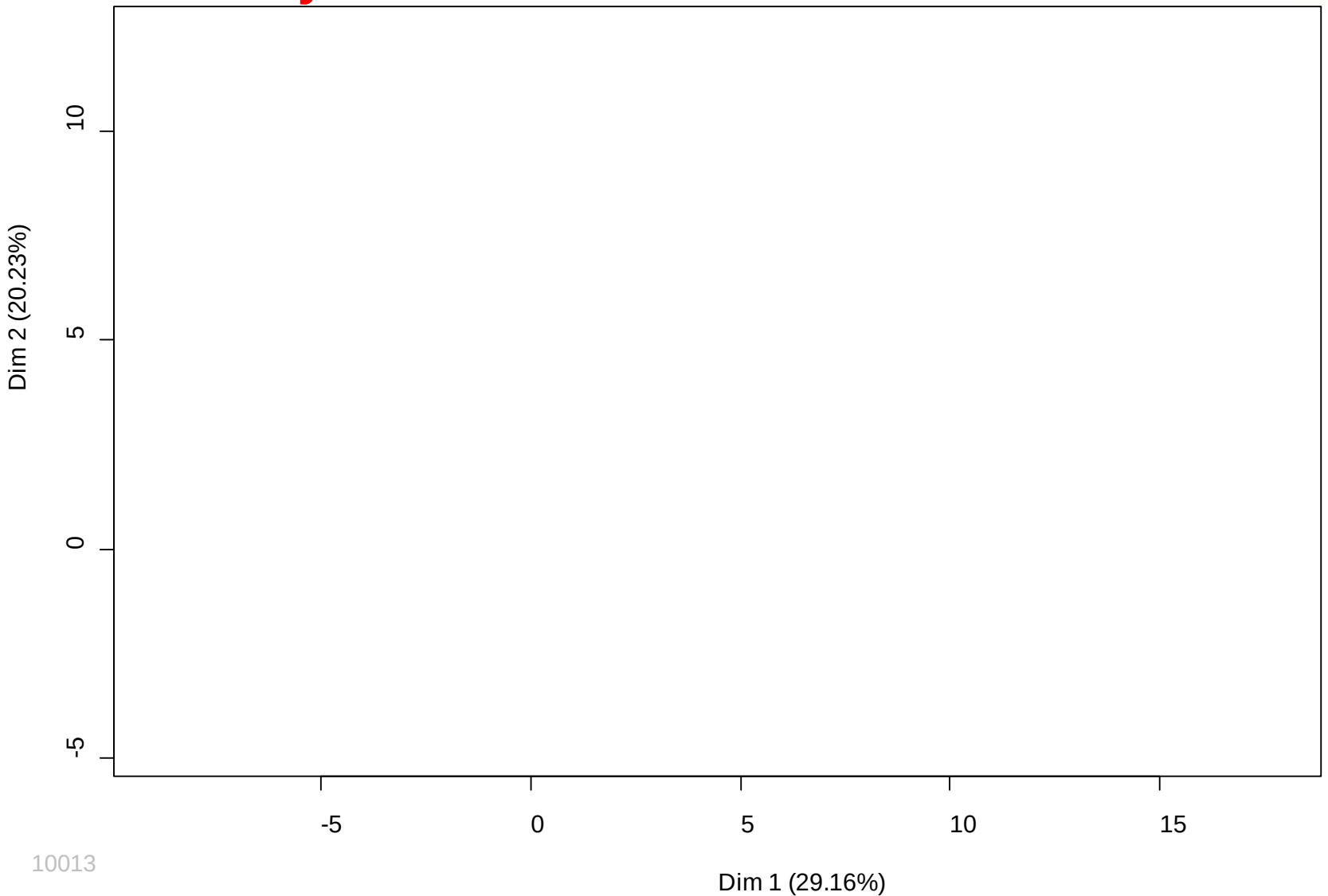



**the actual product *p* is considered as a particular consumer who would have the product *p* as ideal**

# consistency of the data



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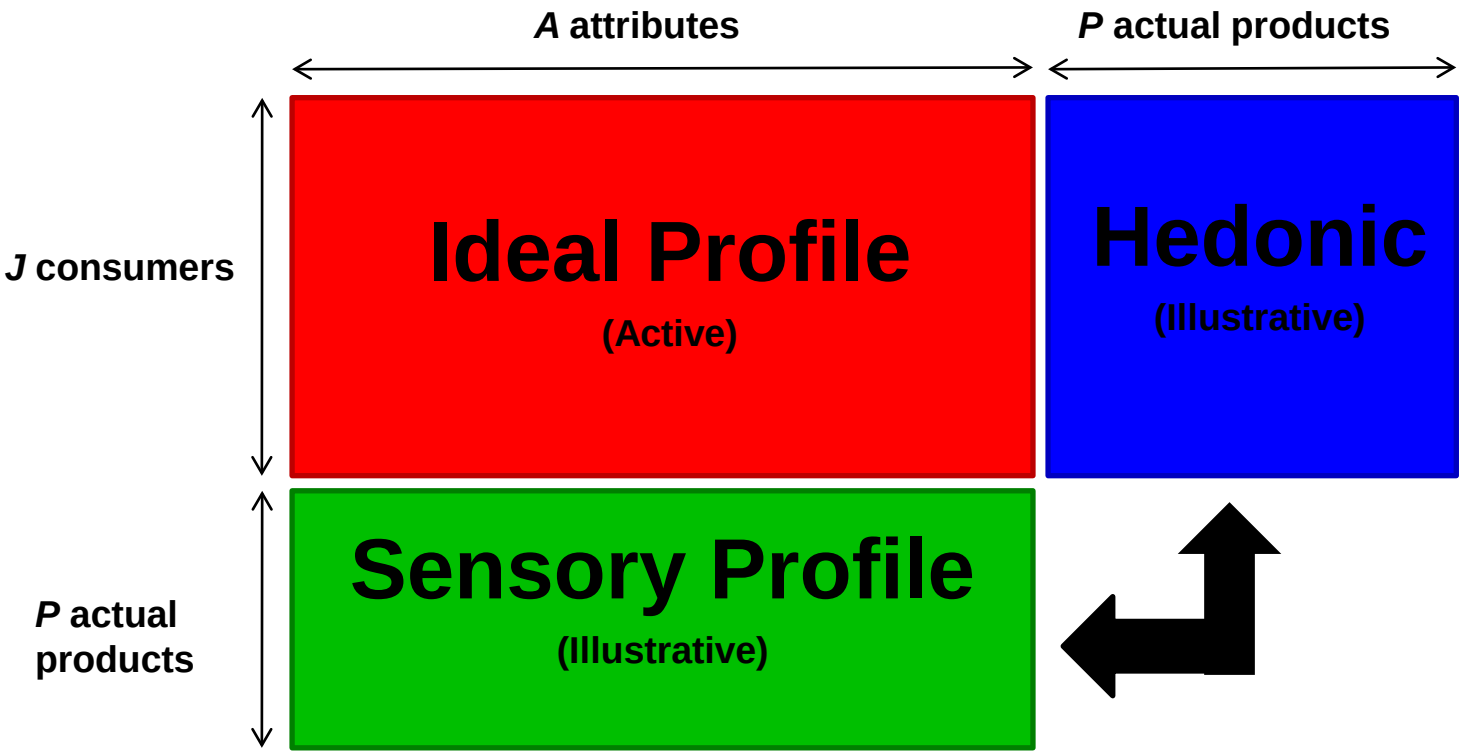

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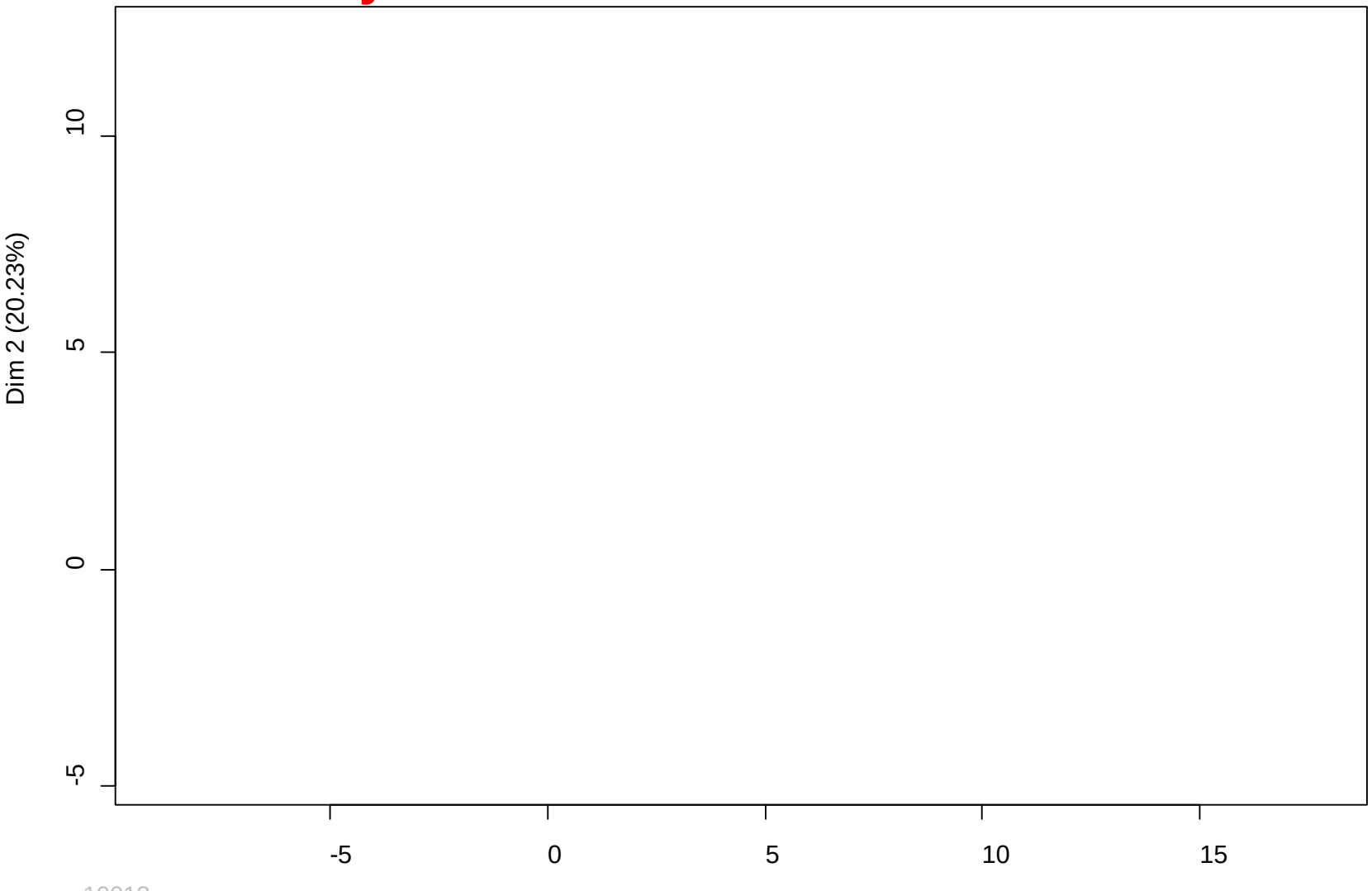

# consistency of the data

- 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

# general conclusions

- Ideal Profiles can be a difficult task for consumers, but still:
  - most of them are able to describe their ideals, although some of them struggle
  - the ideals are not a random description
  - the ideals are consistent with the sensory description and with the liking of the products

- all these statements validate the description of ideals by consumers
  - this can aid the improvement of the actual products
  - it has the advantage for each consumer, each product and each attribute, the exact difference between the perceived and the ideal intensities is known

# THANK YOU

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