8th Pangborn Sensory Science Symposium

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Contrasting Ideal Point and Vector Models of Liking

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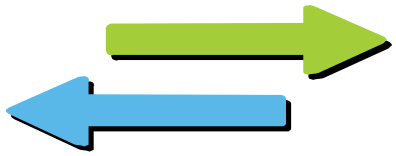
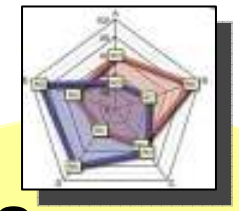
Modeling Liking

- Market appraisal studies are often conducted to investigate consumers' liking patterns
- First a set of products is selected

- Then two types of data are collected

Consumer liking ratings



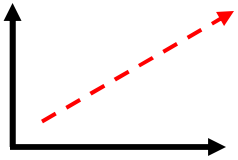


Sensory and/or analytical information

Modeling Liking

- Various techniques can then be used to uncover:
  - Population segmentation

  - Drivers of liking

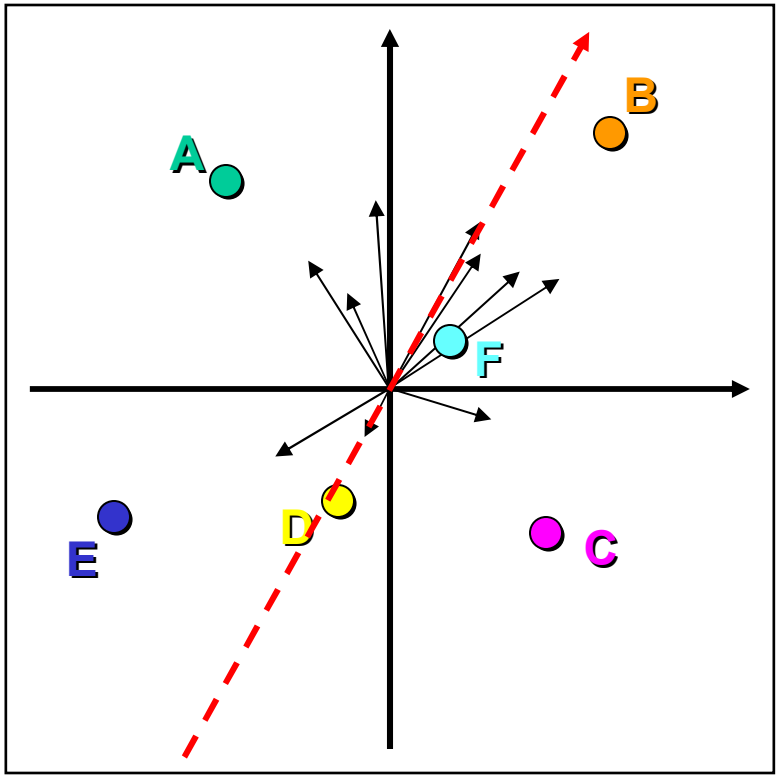


  - Profiles of optimal products

- Two of them are:
  - Internal Preference Mapping (IPM)
  - Landscape Segmentation Analysis® (LSA)

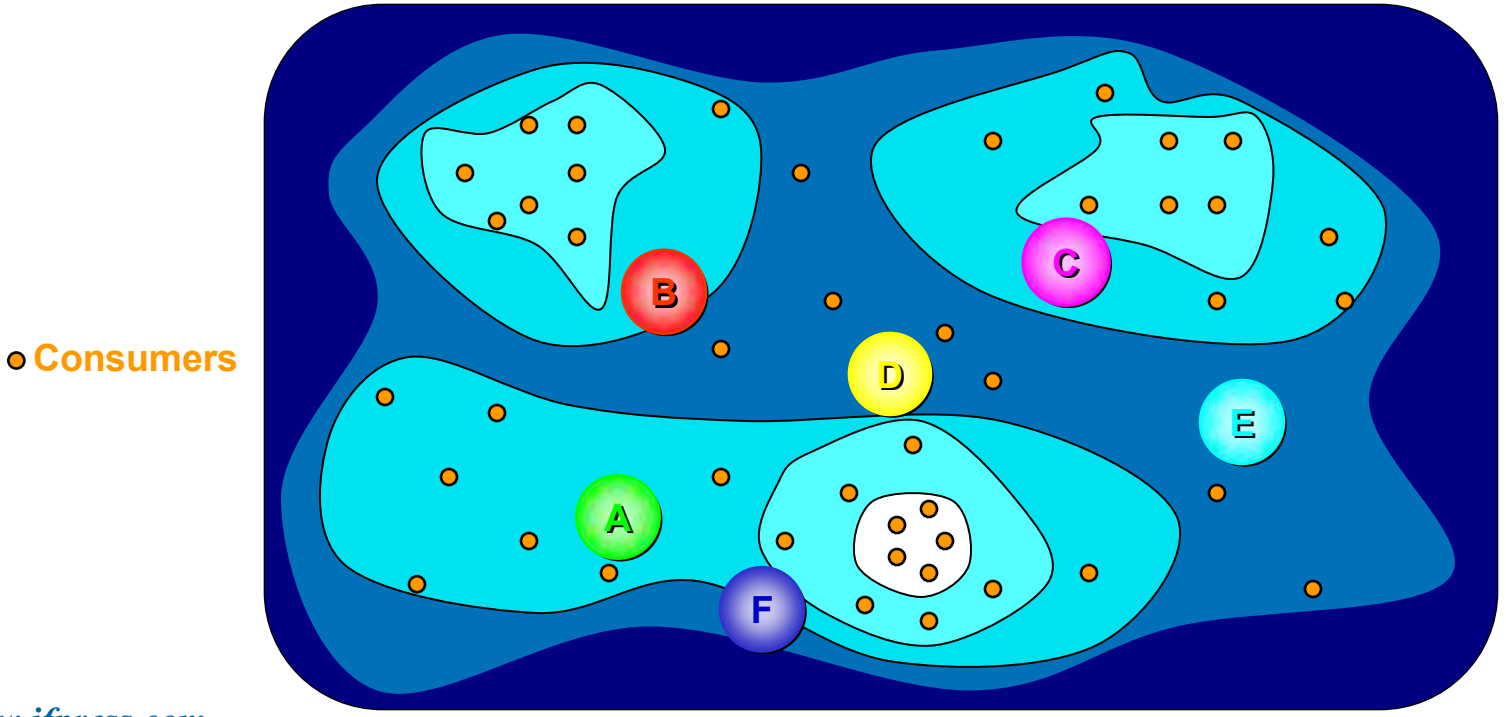
Internal Preference Mapping

- Based on Gabriel (1971)
- Products are represented by points
- Consumers are represented by vectors with hedonic liking directions



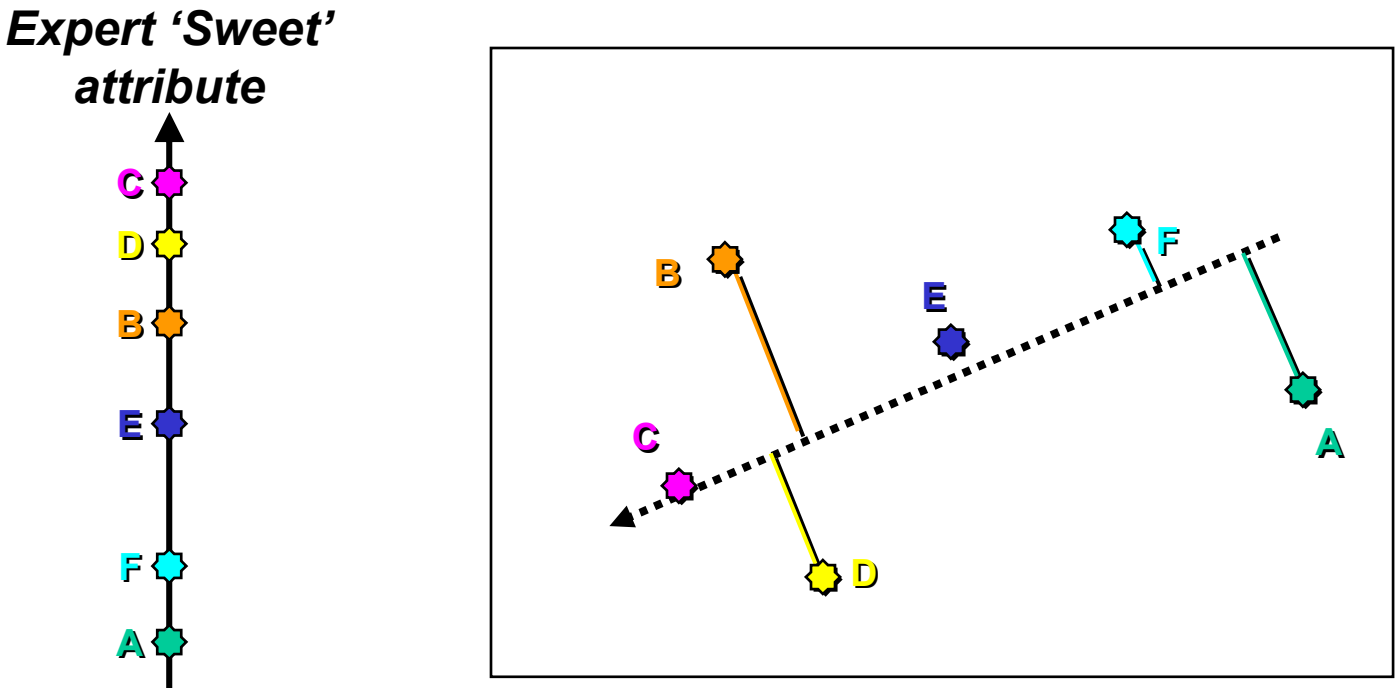
Landscape Segmentation Analysis®

- Based on a probabilistic similarity model (Ennis *et al.*, 1988)
- Products represented as distributions
- Consumers represented as ideal points



Finding the Drivers of Liking

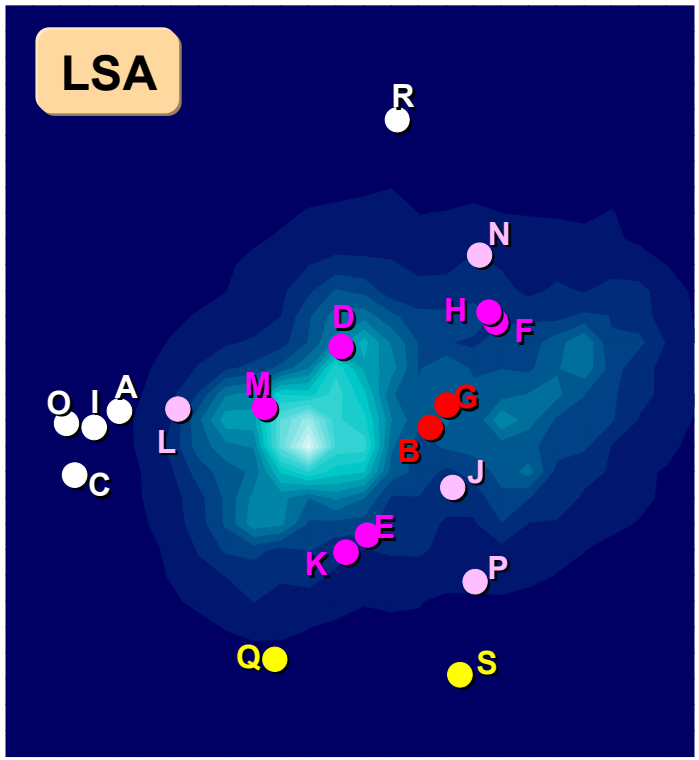
- After liking has been unfolded and a map created, attributes can be regressed on the map
- Those that fit are drivers of liking (DOL), others are not

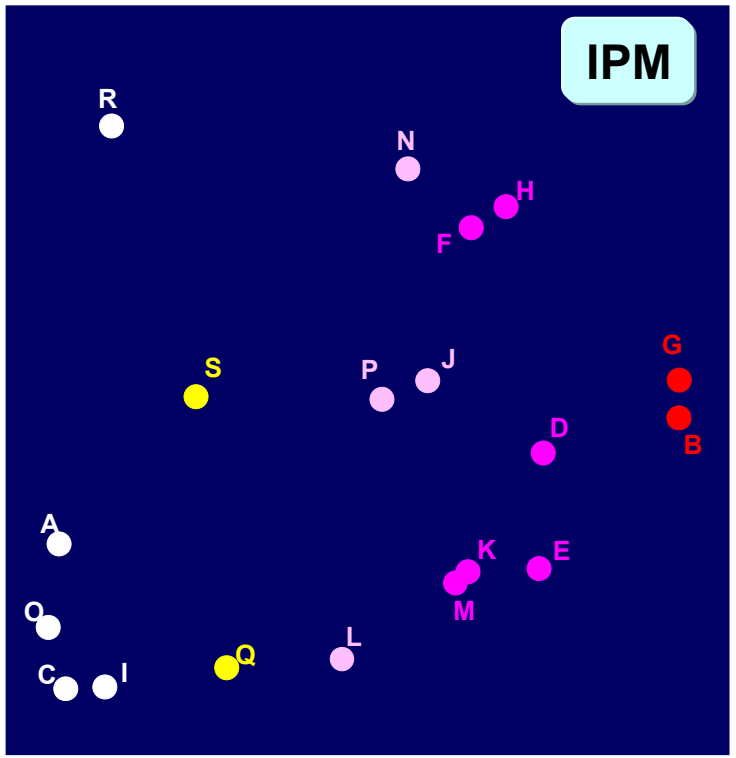


- DOLs are directly dependent on the products' locations

Reliability of the Unfolded Map

- LSA and IPM maps often do not agree in regards to product locations
- Example: Cheddar cheese study





- Consequently they often will find different sets of DOLs

Contrasting Ideal Point and Vector Models of Liking

Simulations

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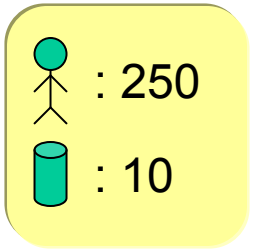
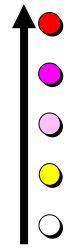
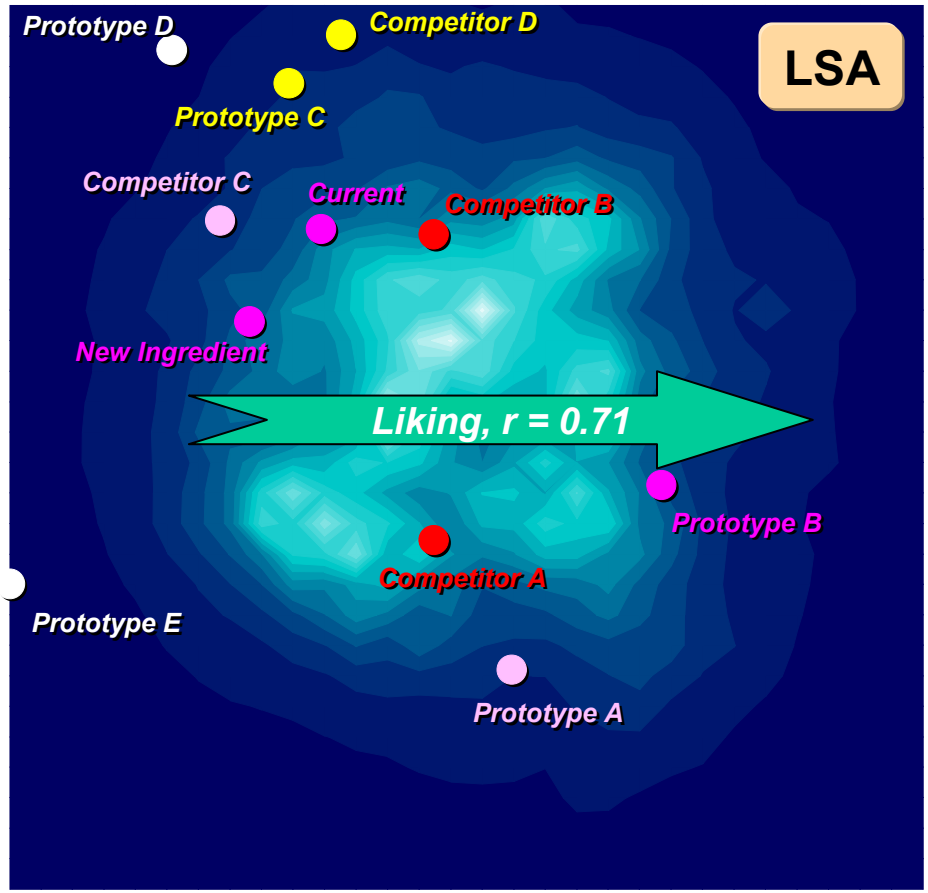
Simulation

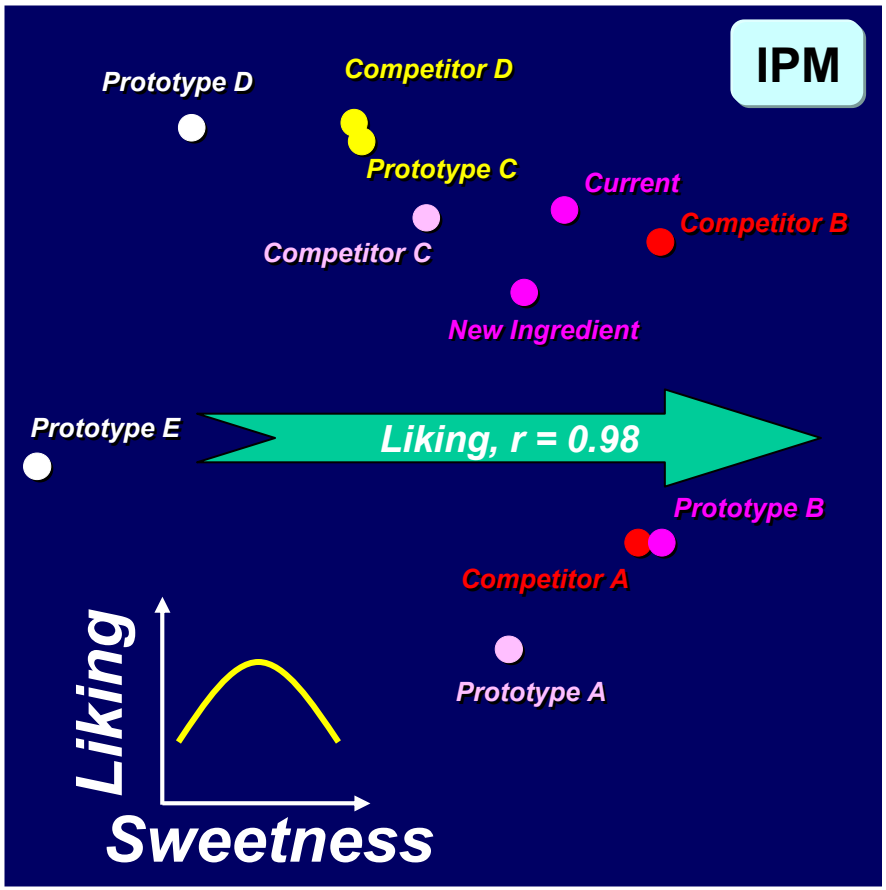
- Scenarios generated with an ideal point model suitable for LSA
  - One of them: 10 products, 250 consumers
- Data was then analyzed with both LSA and IPM

Simulation Results







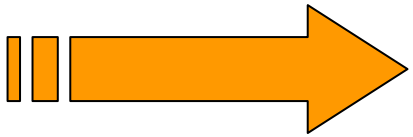


- A much stronger hedonic direction is found with IPM
- Liking not truly unfolded with IPM

Simulation Findings

- Several scenarios confirmed these results
- Two conclusions:

Liking generated with ideal point model



Strong hedonic direction in Internal Preference Mapping

IPM does not successfully unfold liking

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and Vector Models of Liking

Category Appraisal Results

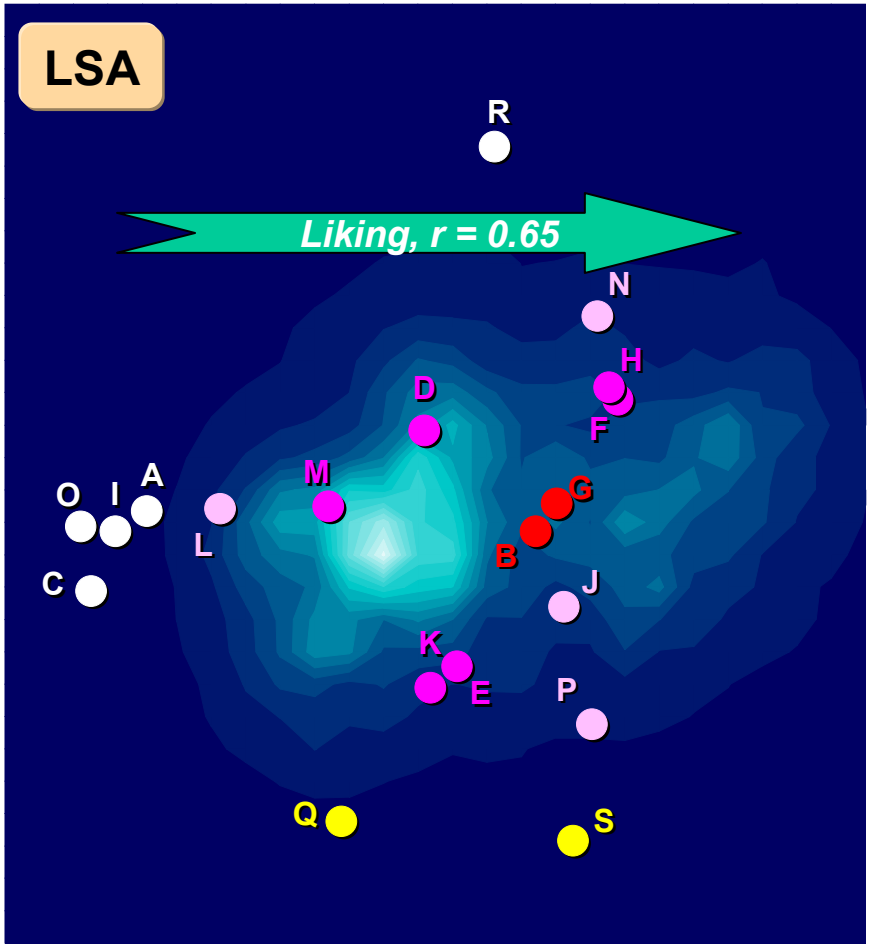
List of Category Appraisals

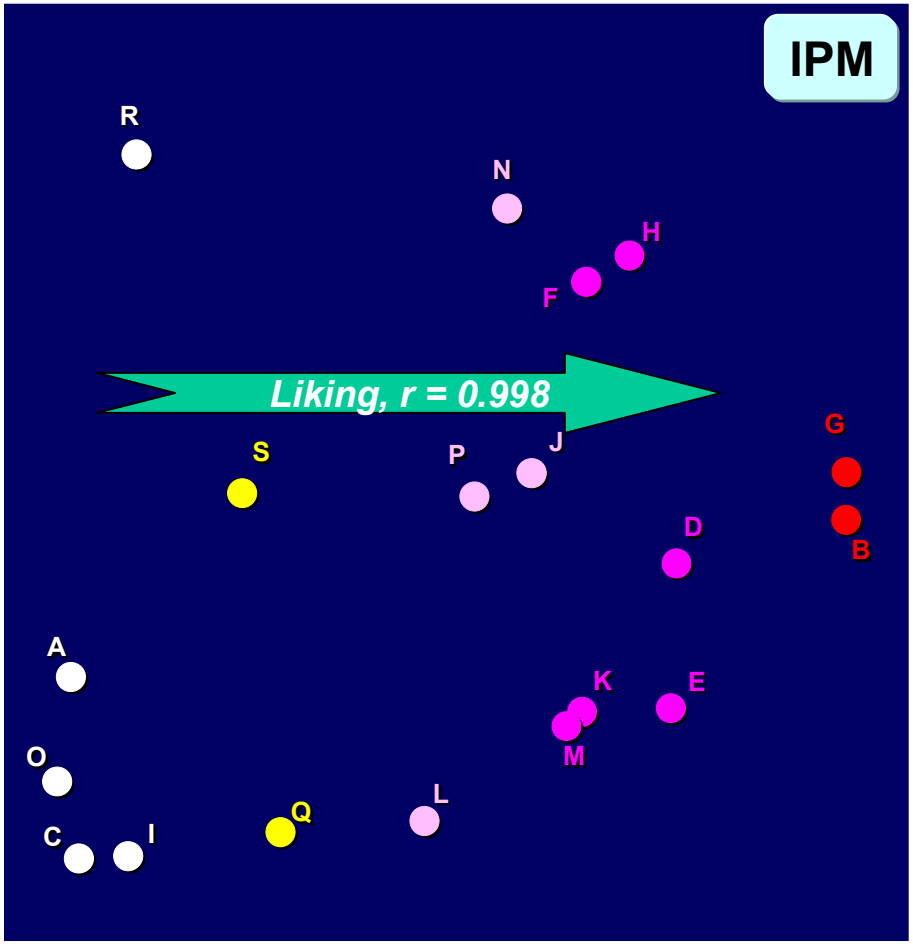
# studies	Product category	Location(s)	# products	# consumers
1	Salad dressing	US	27	318
3	Meat products	US	13-22	198-272
6	Cream cheese	US, Canada, Germany, Italy, UK, Australia	21-24	201-216
2	Mac & Cheese	US	30	109, 318
1	Mayonnaise	US	26	307
9	Processed cheese	US, Canada, Spain, UK, Mexico, Italy, Australia	24-30	202-212
1	Pizza	US	13	207
2	Coffee	US, France	24, 20	270, 405
1	Cheddar cheese	US	19	226
1	Whipped topping	US	24	247

Cheddar Cheese Study

: 226

: 19



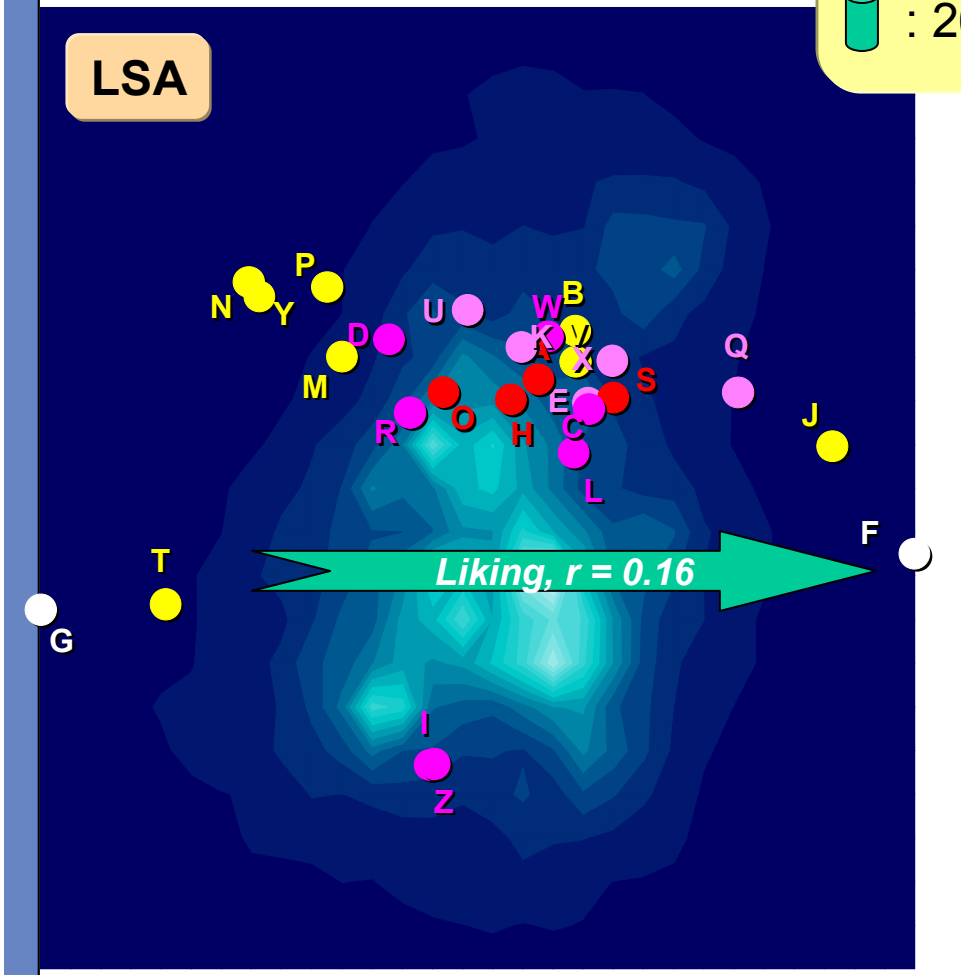


Processed Cheese US Hot Presentation

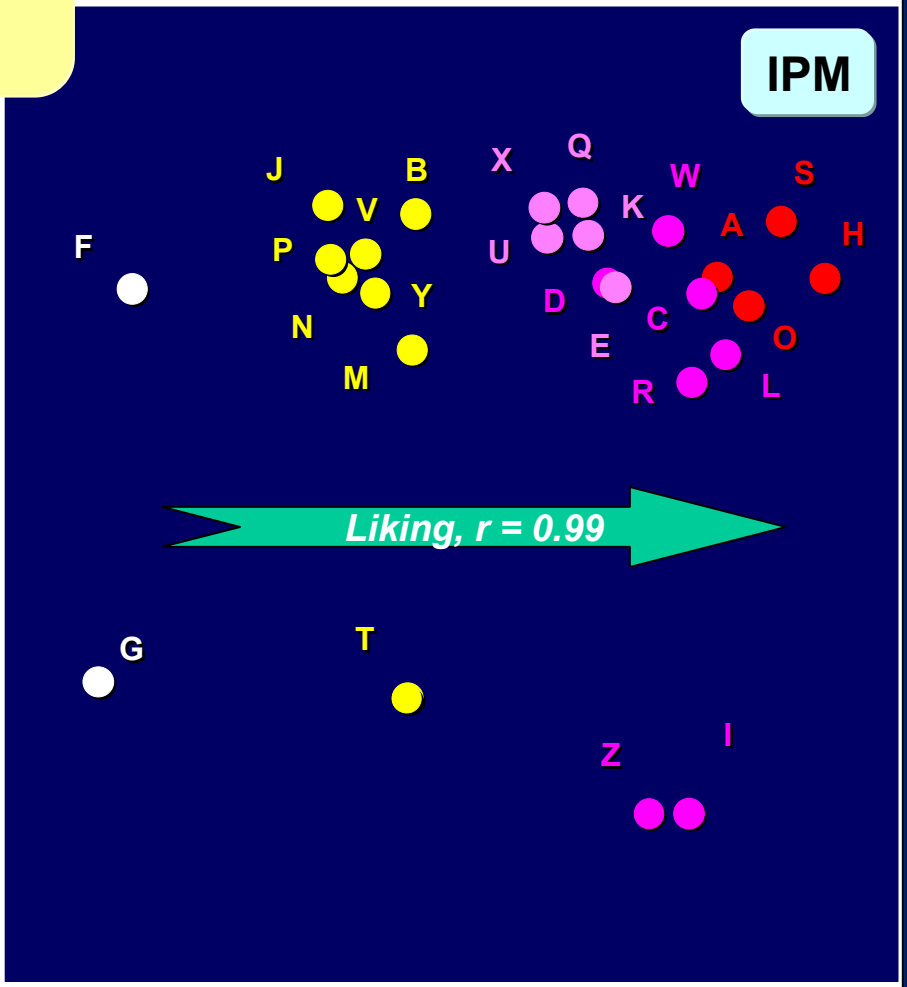
: 212

: 26

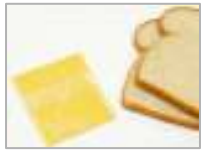
LSA



IPM



Processed Cheese Mexico Study



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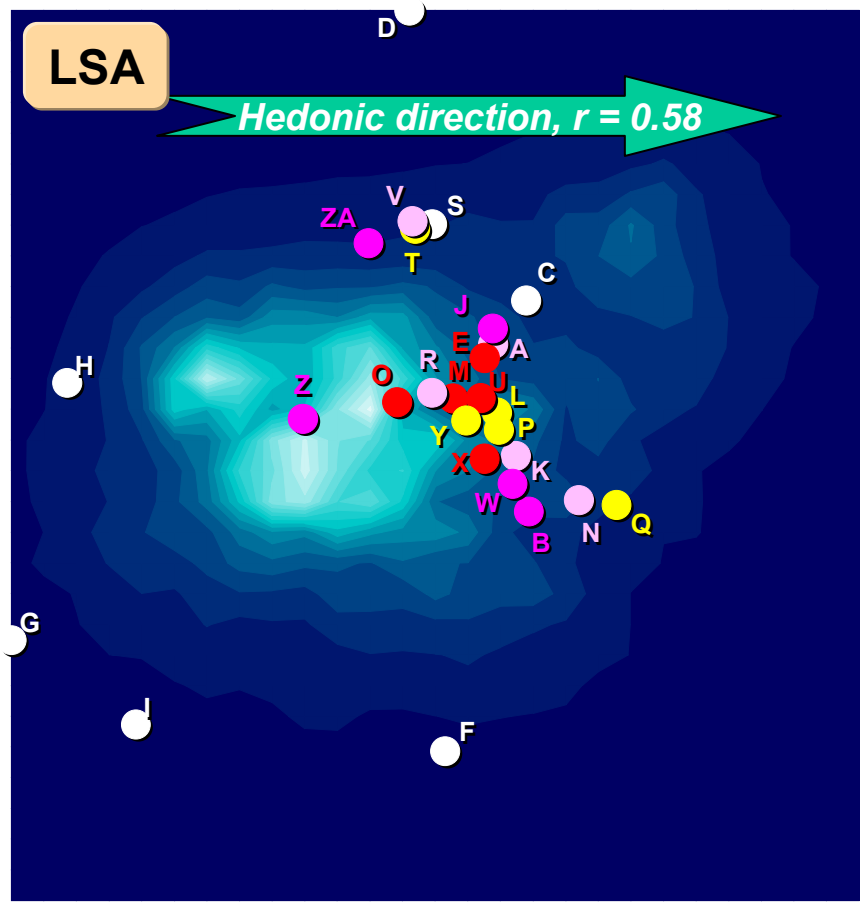

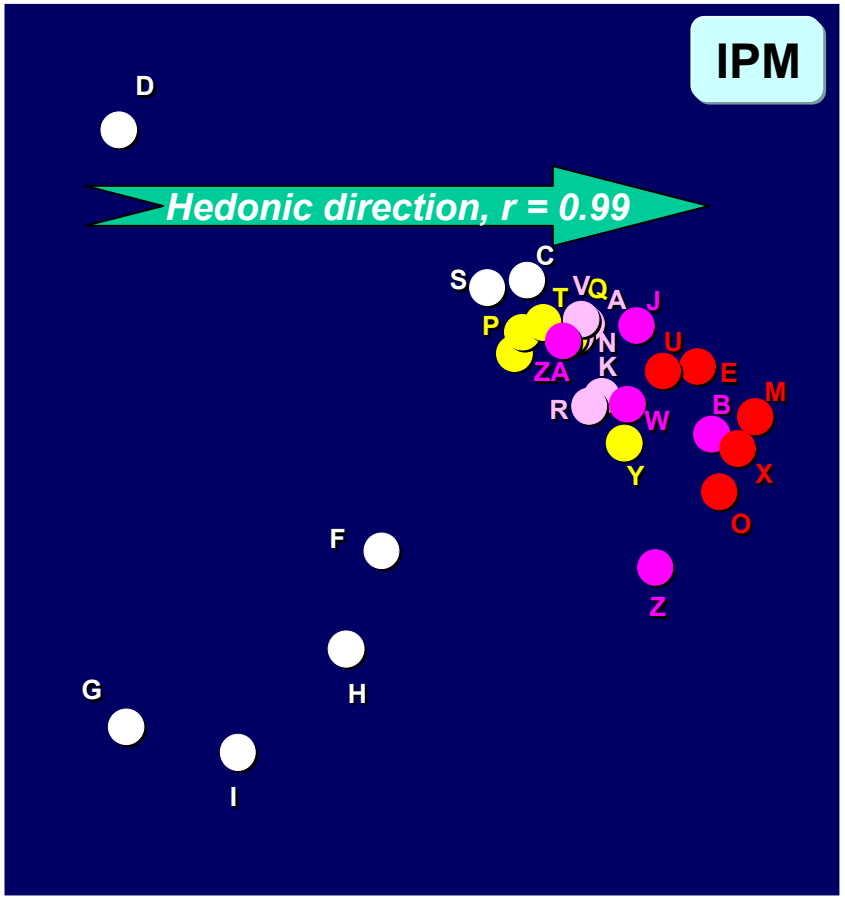

Mayonnaise Study

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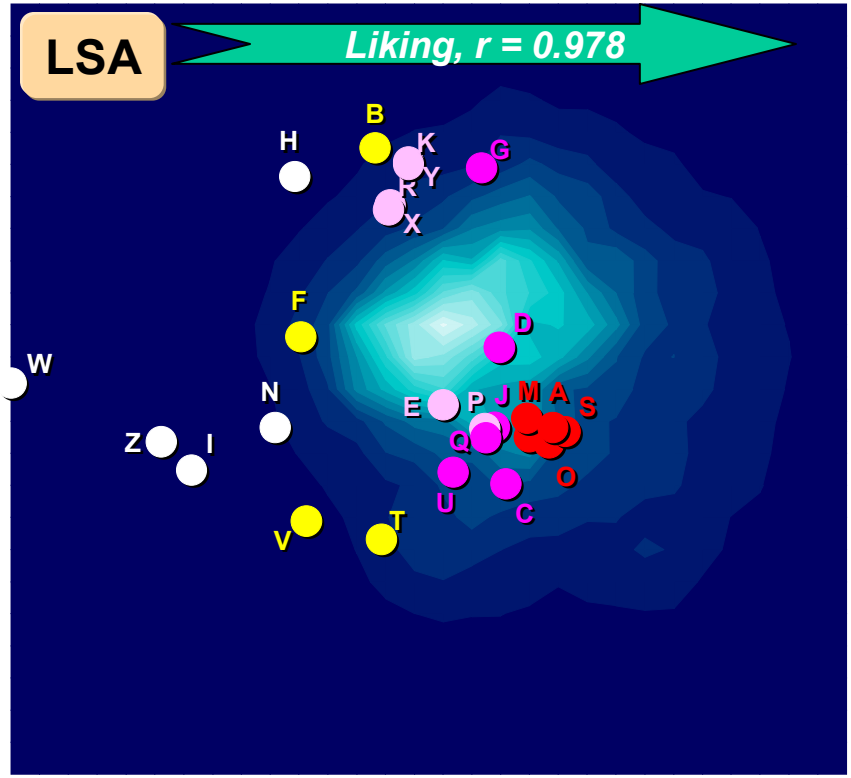
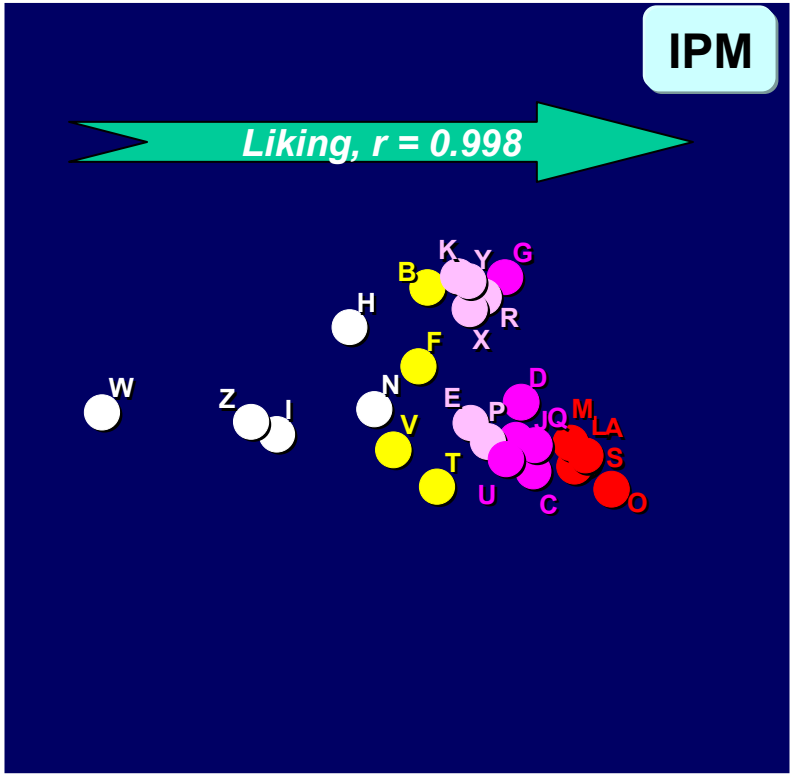
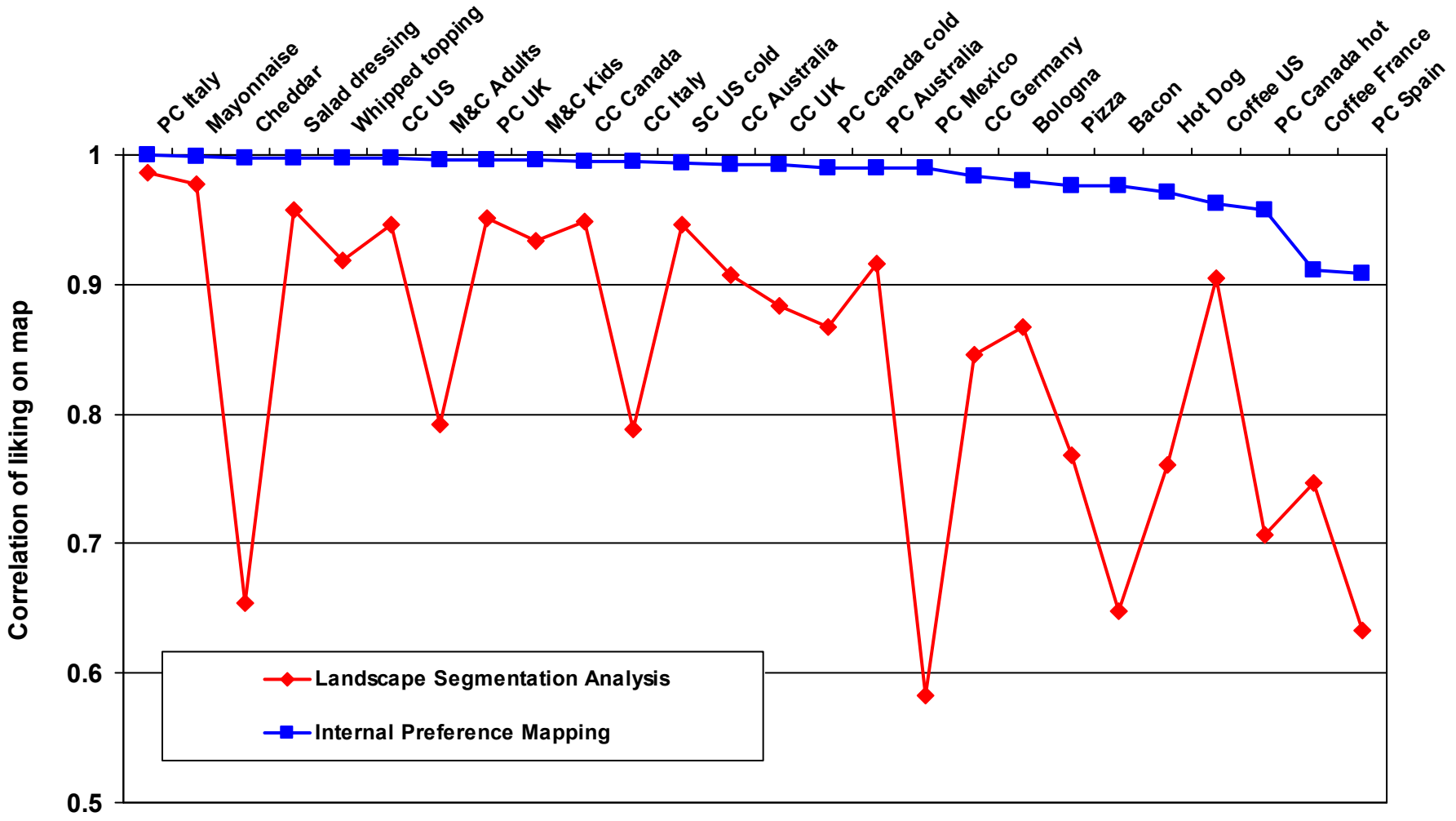




Summary


PC Italy
Mayonnaise
Cheddar
Salad dressing
Whipped topping
CC US
M&C Adults
PC UK
M&C Kids
CC Canada
CC Italy
SC US cold
CC Australia
CC UK
PC Canada cold
PC Australia
PC Mexico
CC Germany
Bologna
Pizza
Bacon
Hot Dog
Coffee US
PC Canada hot
Coffee France
PC Spain
1
0.9
0.8
0.7
0.6
0.5
Correlation of liking on map
Landscape Segmentation Analysis
Internal Preference Mapping

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Conclusions

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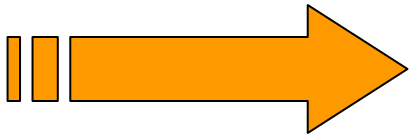
Conclusions

Liking generated with ideal point model



Strong hedonic direction in Internal Preference Mapping

IPM does not successfully unfold liking

- Need to be cautious in the interpretation of IPM results due to the strong hedonic dimension
- Need to consider it when conducting post-hoc analyses such as the identification of the products' drivers of liking

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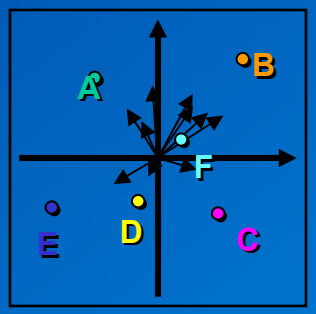
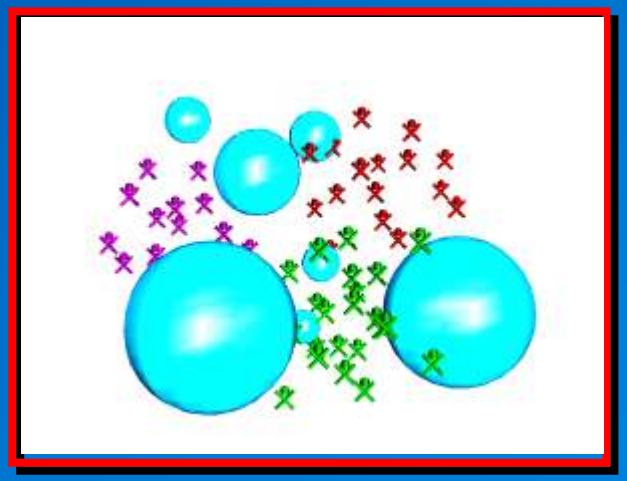
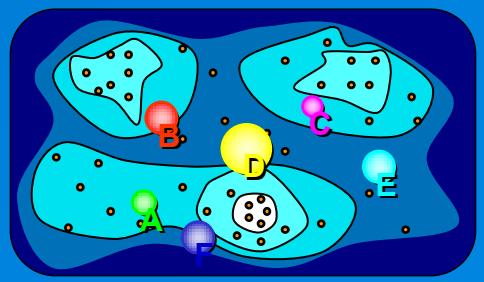
Any Questions?







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