

# Application of Kano Modelling to skin cream products

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- Theory of product development and customer satisfaction
- Developed in the 80's by Professor Noriaki Kano
- Classifies customer preferences/requirements in 4 main axes:
  - *Excitement/Delighter*
  - *Performance/Driver*
  - *Basic/Must have*
  - *Indifferent*

*What features should we innovate?*

*What product attributes must be delivered?*

*Will a new feature be relevant to my consumers?*

# Customer Requirements

## Excitement/Attractive Quality:

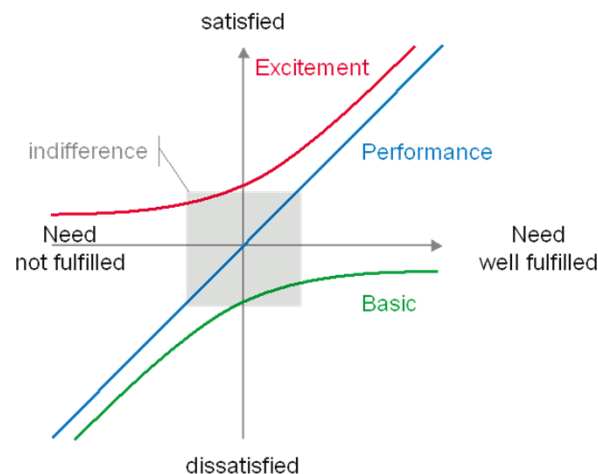
Satisfaction when achieved but not dissatisfaction when not achieved.

## Performance/One dimensional:

Satisfaction when achieved but dissatisfaction when not achieved.

## Must be/basic:

Dissatisfaction when not achieved but no satisfaction when achieved



# Kano Questionnaire

**For each evaluated feature/ingredient, a Kano question include:**

**Feeling of the consumer toward the product if it contain the specific feature/ingredient**

e.g. If your skin cream would contain an anti-ageing agent, how would you feel?

I dislike it that way	I can live with it that way	I am neutral	It must be that way	I like it that way
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**Feeling of the consumer toward the product if it DOESN'T contain the specific feature/ingredient**

e.g. If your skin cream would NOT contain an anti-ageing agent, how would you feel?

I dislike it that way	I can live with it that way	I am neutral	It must be that way	I like it that way
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**Self stated importance: consumer perception of the importance of the specific feature/ingredient in the product**

e.g. How important do you consider the presence/absence of anti-ageing agent in your skin cream?

Not important	Somewhat important	Important	Very important	Extremely important
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# Variations of the 5-points original scale

Original	Alternative 1	Alternative 2	Alternative 3
I like it that way	I enjoy it that way	This would be very helpful for me	I like it
It must be that way	I expect it this way or it is the basic necessity	This is a basic requirement for me	I expect it
I am neutral to this feature	I am neutral to this feature	This would not affect me	I am neutral
I can live with it that way	I dislike it but I can live with it this way	This would be a minor inconvenience	I can tolerate it
I dislike it that way	I dislike it and cannot accept it	This would be a major problem for me	I dislike it

# Kano Evaluation Table

		Dysfunctional (negative form of the question)				
		Like	Must be	Neutral	Live with	Dislike
Functional (positive form of the question)	Like	Q	A	A	A	O
	Must be	R	I	I	I	M
	Neutral	R	I	I	I	M
	Live with	R	I	I	I	M
	Dislike	R	R	R	R	Q

## REFERENCE

<b>A</b>	Attractive/Delighter
<b>M</b>	Must be/Must have
<b>R</b>	Reverse
<b>O</b>	One dimensional/Driver
<b>Q</b>	Questionable
<b>I</b>	Indifferent

By combining the 2 first answers using this table, the feature/ingredient is classified into 1 of the 6 category.

e.g.

Live with (functional) and dislike (dysfunctional) = **Must be** attribute for 1 respondent.

The same operation is applied for every question of each respondents

# Practical



# Satisfaction and dissatisfaction

Each feature/ingredient is classified across all consumer:

*Example for a skin cream product*

	A	O	M	I	R	Q	Total	Category
Recyclable	35.6	31.5	6.6	24.8	0.5	0.9	100	A
Glass.pot	27.9	3.0	0.3	53.5	14.0	1.3	100	I
Squeezable.tube	23.0	2.7	0.5	53.1	18.8	1.9	100	I
Flip.lid	19.9	5.5	4.6	55.6	7.1	7.2	100	I
Lightly.perfumed	20.1	5.7	1.5	41.3	30.1	1.2	100	I
Rose.smell	13.7	0.5	0.2	38.3	45.4	1.8	100	R
Honey.smell	12.2	0.3	0.3	43.7	41.5	2.1	100	I
Chocolate.smell	3.6	0.4	0.1	16.1	74.6	5.2	100	R
Absorbent	13.7	48.1	23.4	12.2	1.3	1.1	100	O
Soothing	41.0	31.5	5.7	18.6	0.5	2.6	100	A
Plumping	12.5	2.1	0.3	44.0	39.6	1.4	100	I
Thin.texture	10.0	4.2	0.9	48.4	33.5	3.0	100	I
Anti.ageing	31.0	27.2	9.0	28.8	3.2	0.8	100	A
Caffeine.wake.up	9.1	0.9	0.1	43.2	45.2	1.5	100	R
Camomile	33.4	4.6	0.7	53.3	6.8	1.3	100	I
Color.applicator	8.4	1.5	0.2	55.2	33.1	1.7	100	I
Anti.blushing	12.9	2.4	0.6	60.2	22.1	1.7	100	I
Even.skin.tone	40.6	15.1	3.7	33.6	5.3	1.7	100	A
Customize.flavour	4.1	0.5	0.3	43.8	49.3	2.1	100	R

The coefficient of satisfaction and dissatisfaction is computed as follow:

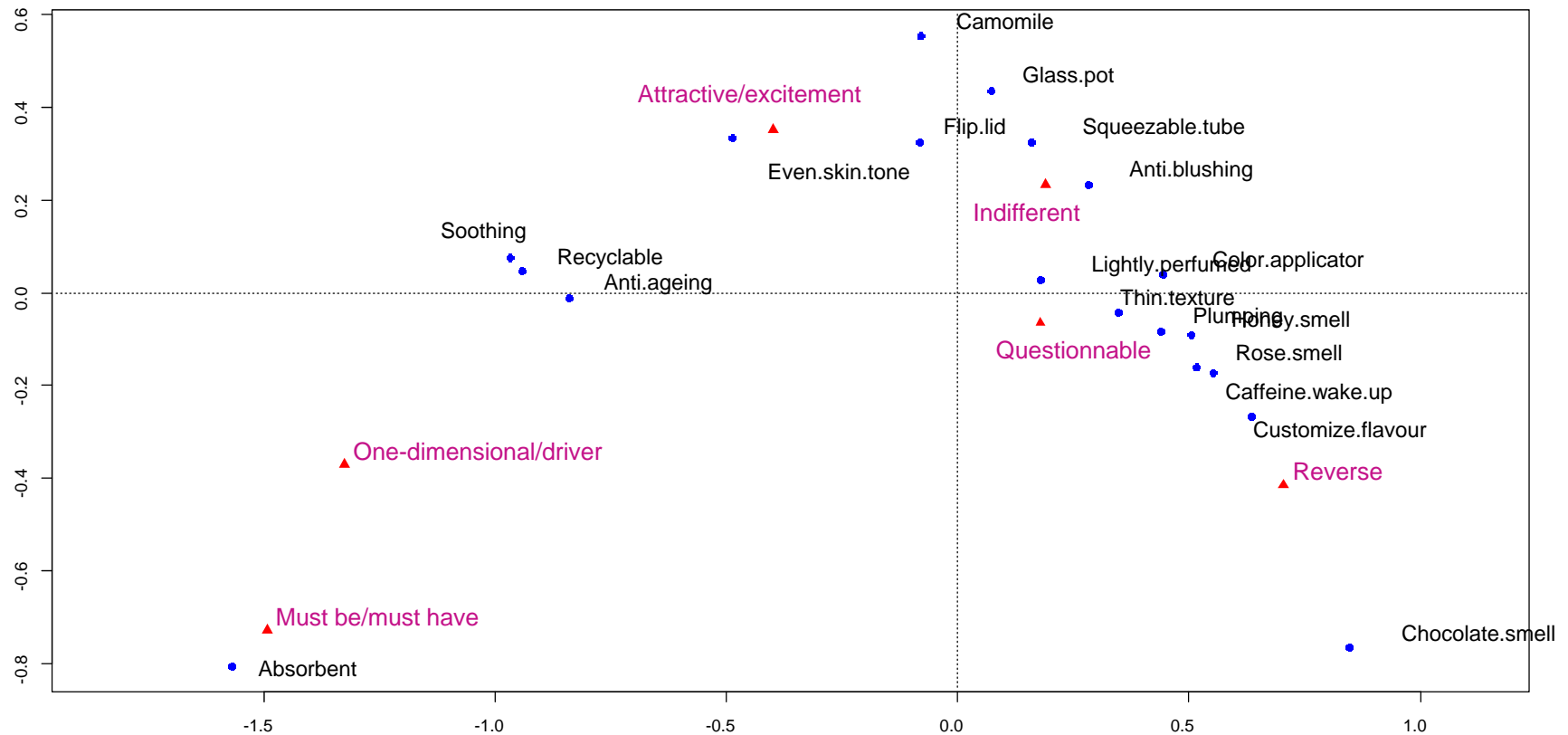
**Satisfaction** :  $(A+O) / (A+O+M+I)$

**Dissatisfaction** :  $(M+O) / (A+O+M+I) \times (-1)$



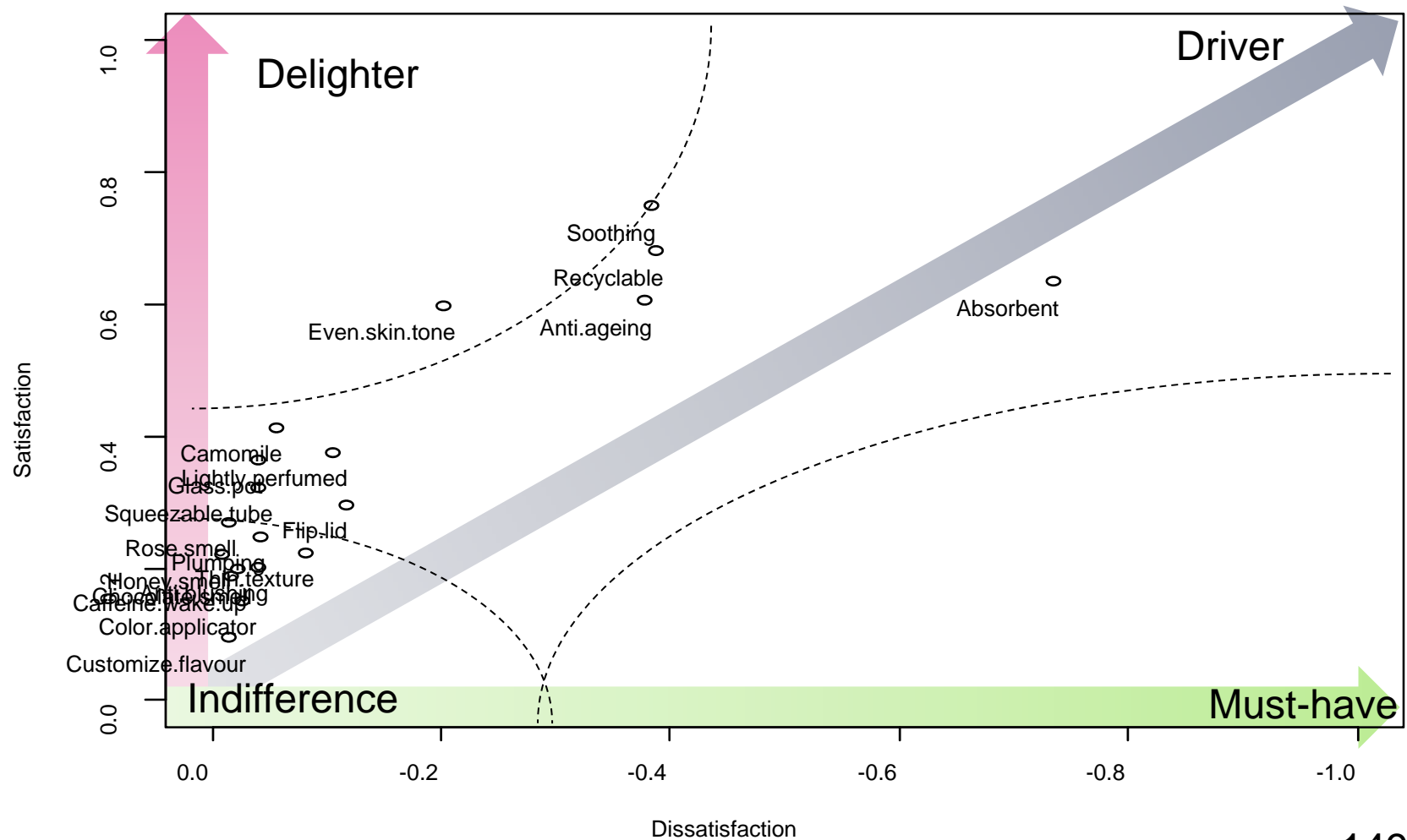
# Correspondence Analysis

Correspondence Analysis



# Whole Sample

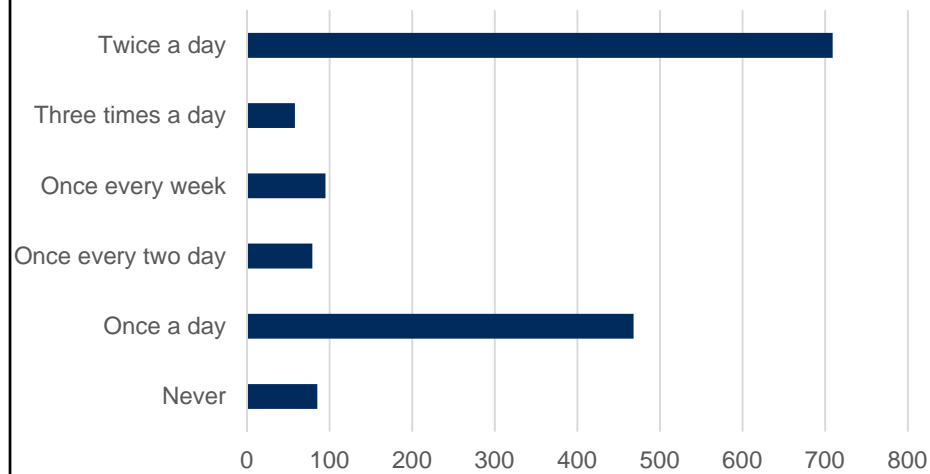
### Influence of product features



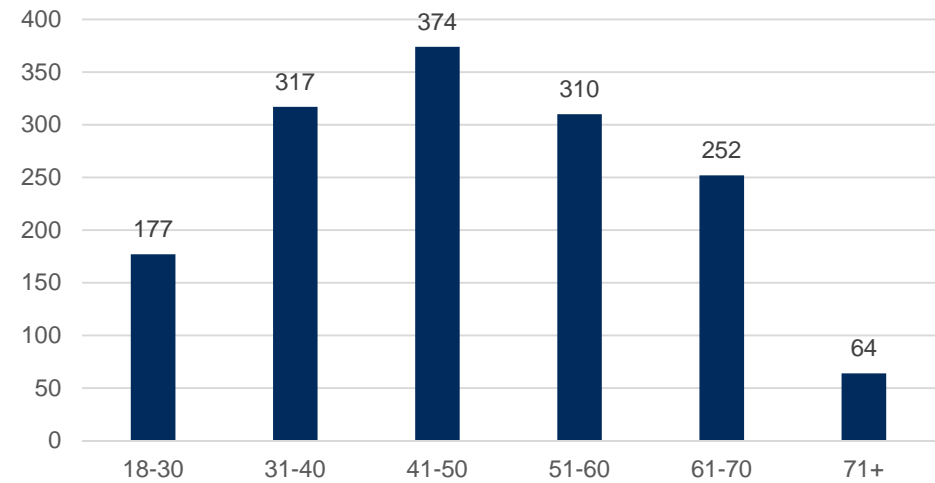
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# Demographics

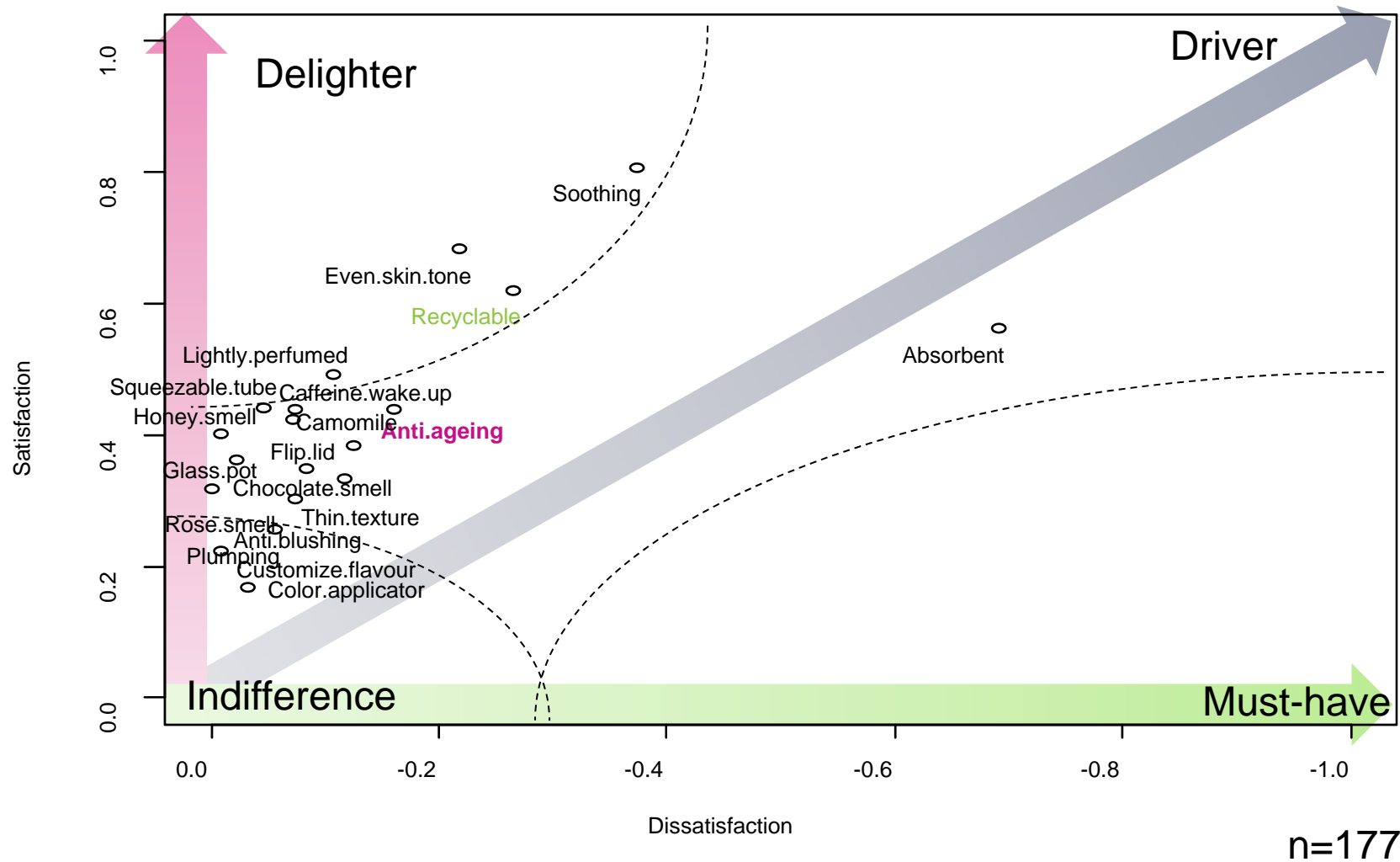
### Frequency



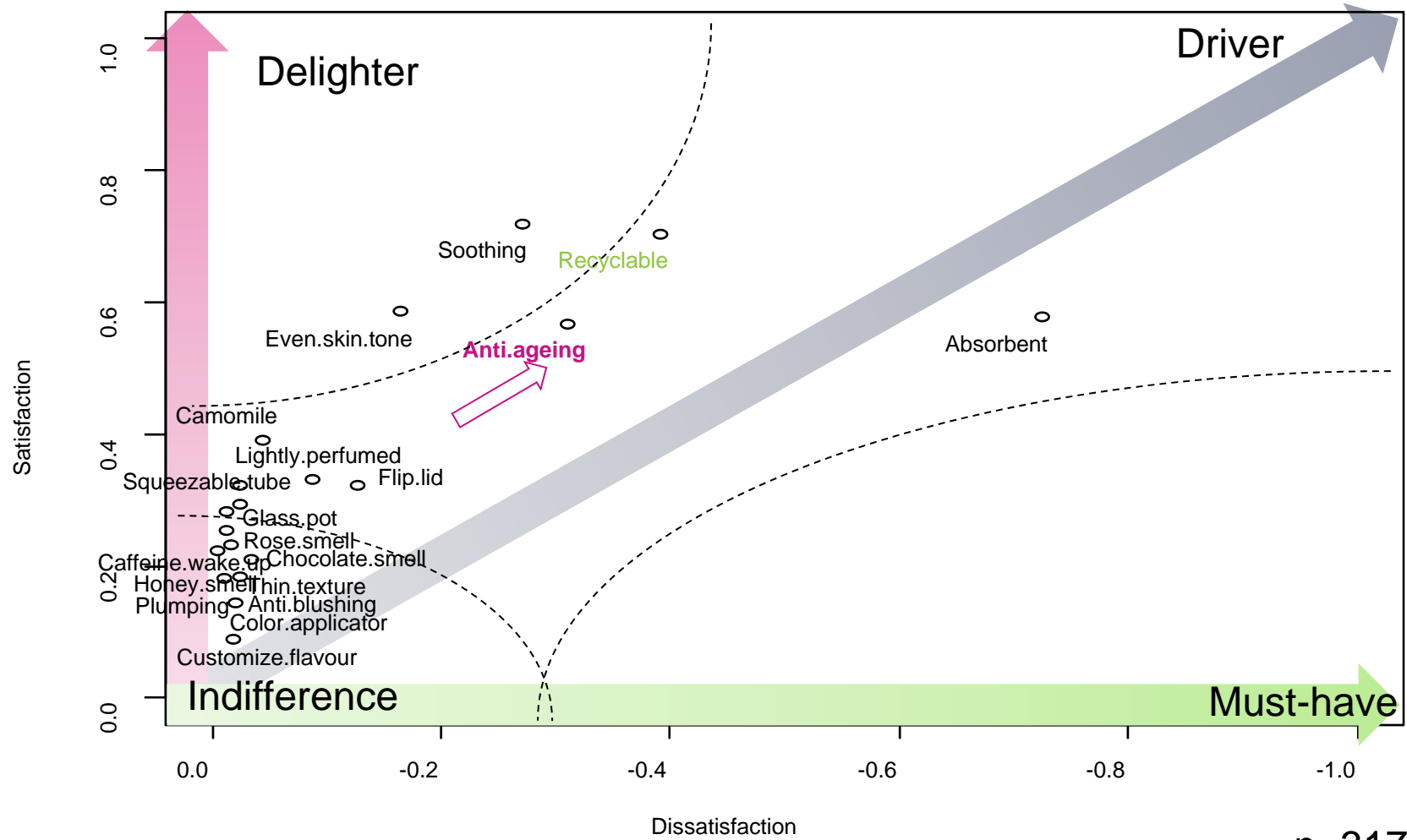
### Age



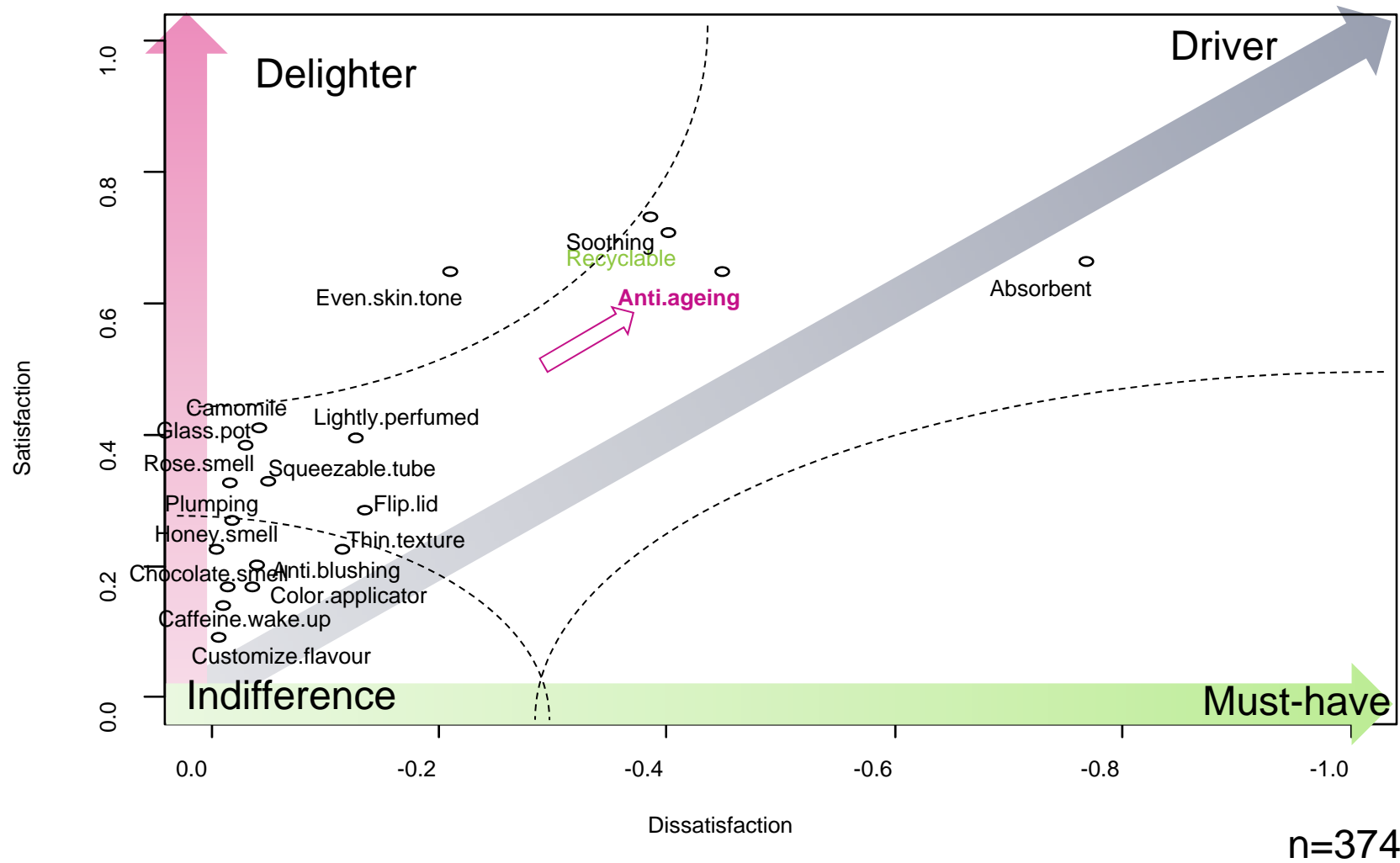
Influence of product features



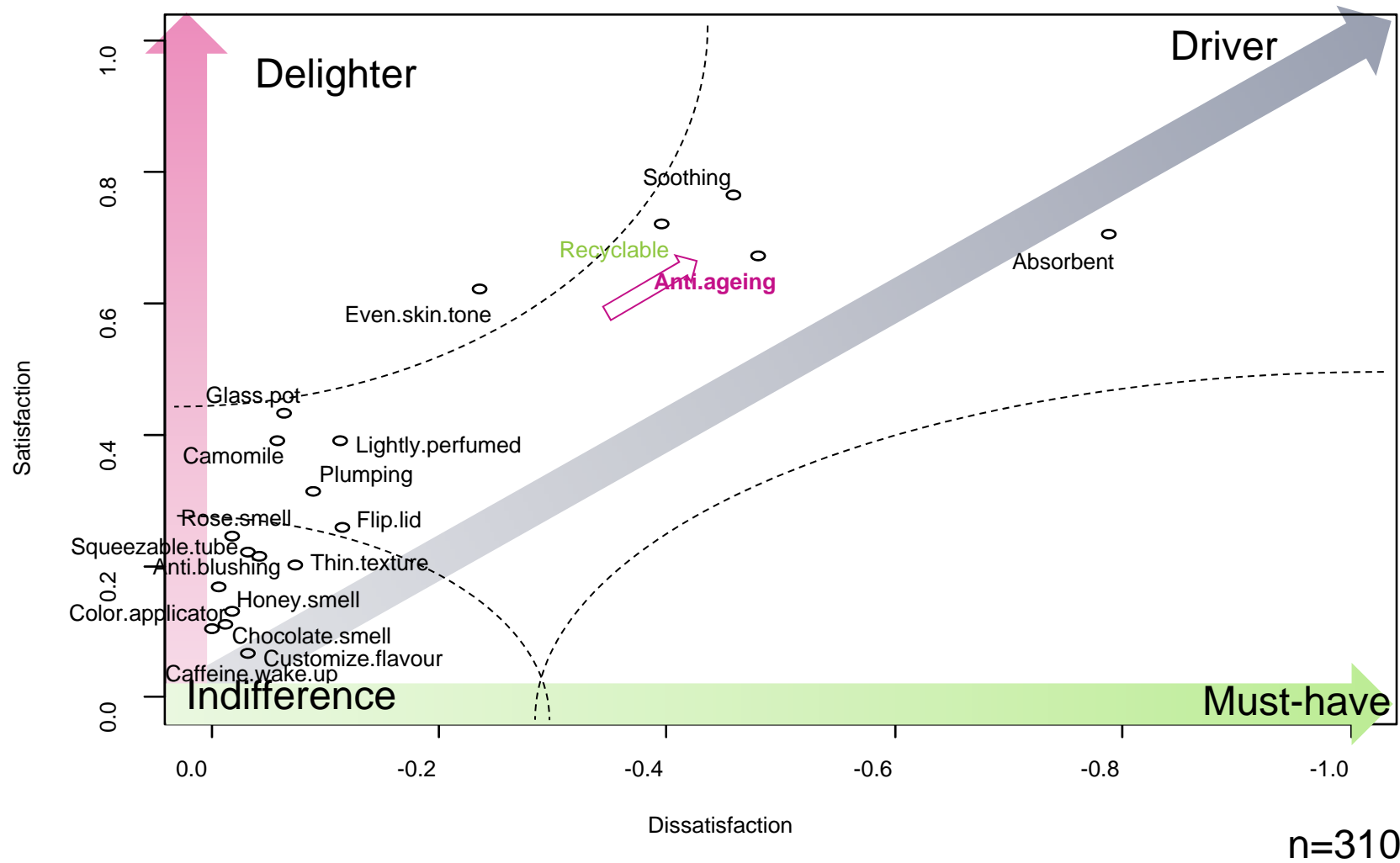
Influence of product features



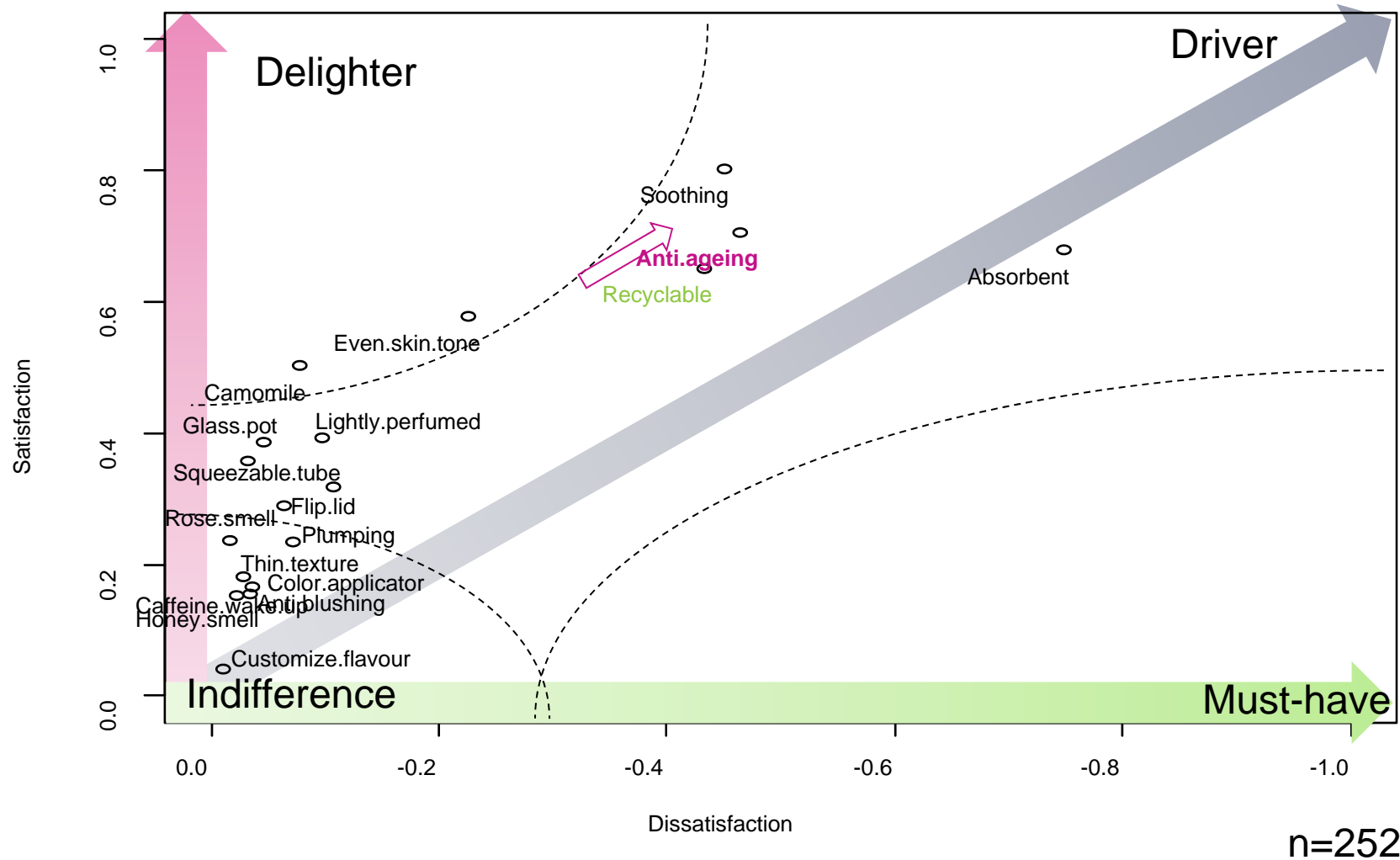
Influence of product features



Influence of product features

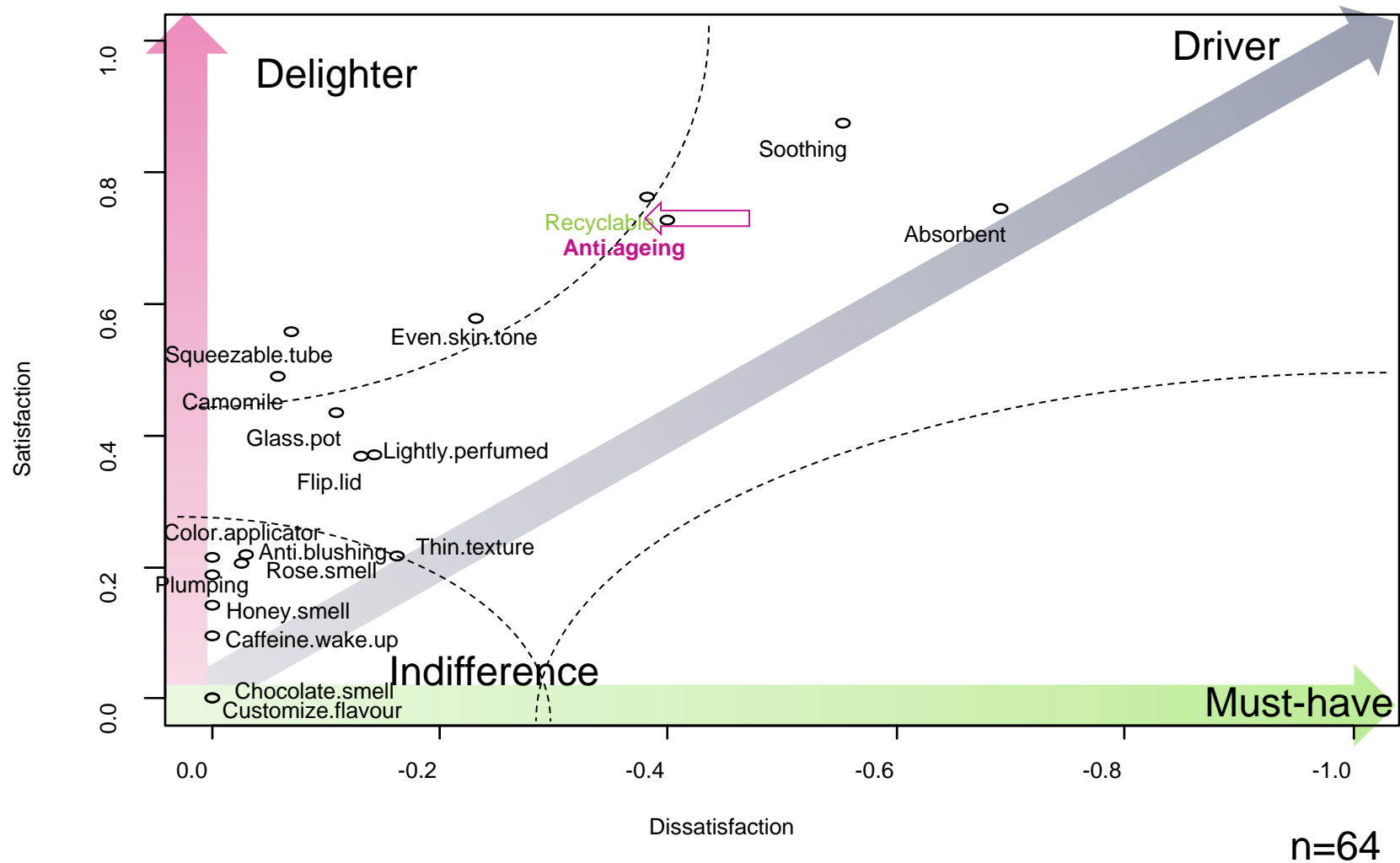


Influence of product features





Influence of product features



# Conclusion

- Method adapted to new food prototype/concept
  - Basic
  - Performance
  - Excitement



- Useful in NPD to analyse consumer satisfaction on different feature/ingredients of a product.
- Opportunity to investigate and track the evolution of customer satisfaction through time.

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Xu, Q; Jiao, R.J. (2009). An analytical Kano model for customer need analysis. *Design Studies*. 30 (1), p87-110.



**Thank you for your time  
Any questions?**

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