



# Advanced Analysis Methods for Car Clinics in Market Research

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- Quantitative, self-administrable questionnaires of 1 to 3 hours length (500 to 1500 variables)
- Usually 100 to 500 respondents (each country)
- Comparison of prototype(s) or concept car(s) with various (up to 4) competitors
- Usually one sampling point in each country
- Questionnaire consists of different parts, identical for the models. In depth questioning for prototype



## General questions:

- Car possession, buying history, preferences (e.g. fuel, transmission)
- Concept preferences
- Important dimensions for buying (e.g. safety, sportiness)
- Attitudes towards cars and driving
- Brand and/ or model image(s)
- Milieu indicator, trend constructing data
- Price positioning
- Sociodemographic data



### Model specific questions:

- Detailed assessment of model exterior (front, side, back): Spontaneous, angle view, feature evaluation (e.g. headlights, bumper, exhaust), semantic profile, overall rating
- Detailed assessment of model interior (e.g. dashboard, center console, seats): Spontaneous, feature evaluation (e.g. materials, colours, haptics), semantic profile, overall rating
- Ranking of models on preference, readiness to buy
- Reactions on unmasking manufacturer, model name



## Descriptive view and bivariate relationships:

- Tabulating results
- Means, top- and bottom-boxes
- Differences between groups

## Problems and lacks:

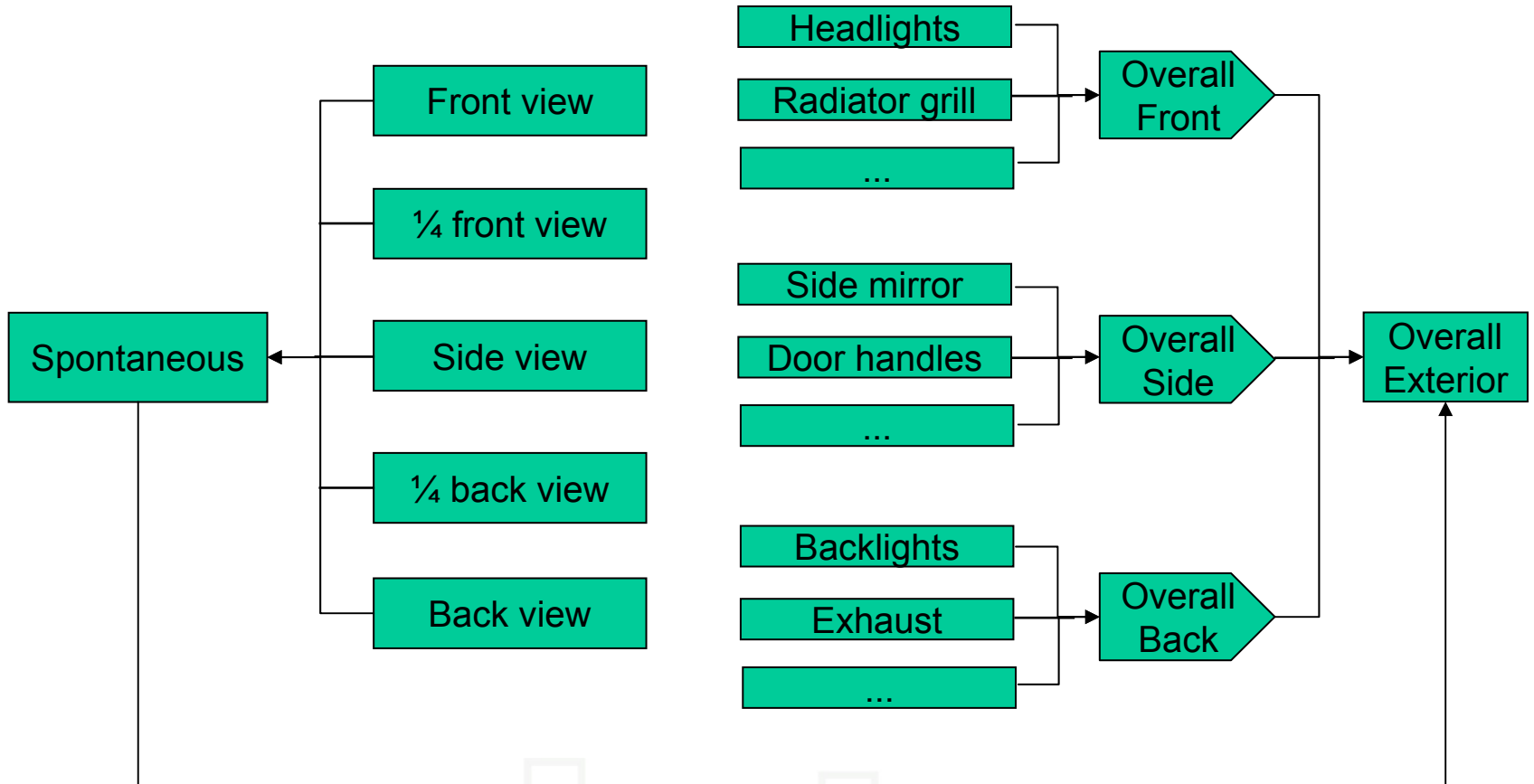
- Hundreds of variables and thousands of relationships: "Lost in data"
- Positive over-determination (big amount of positive relationships): "But what is really important?"
- Little or no structure in result presentation



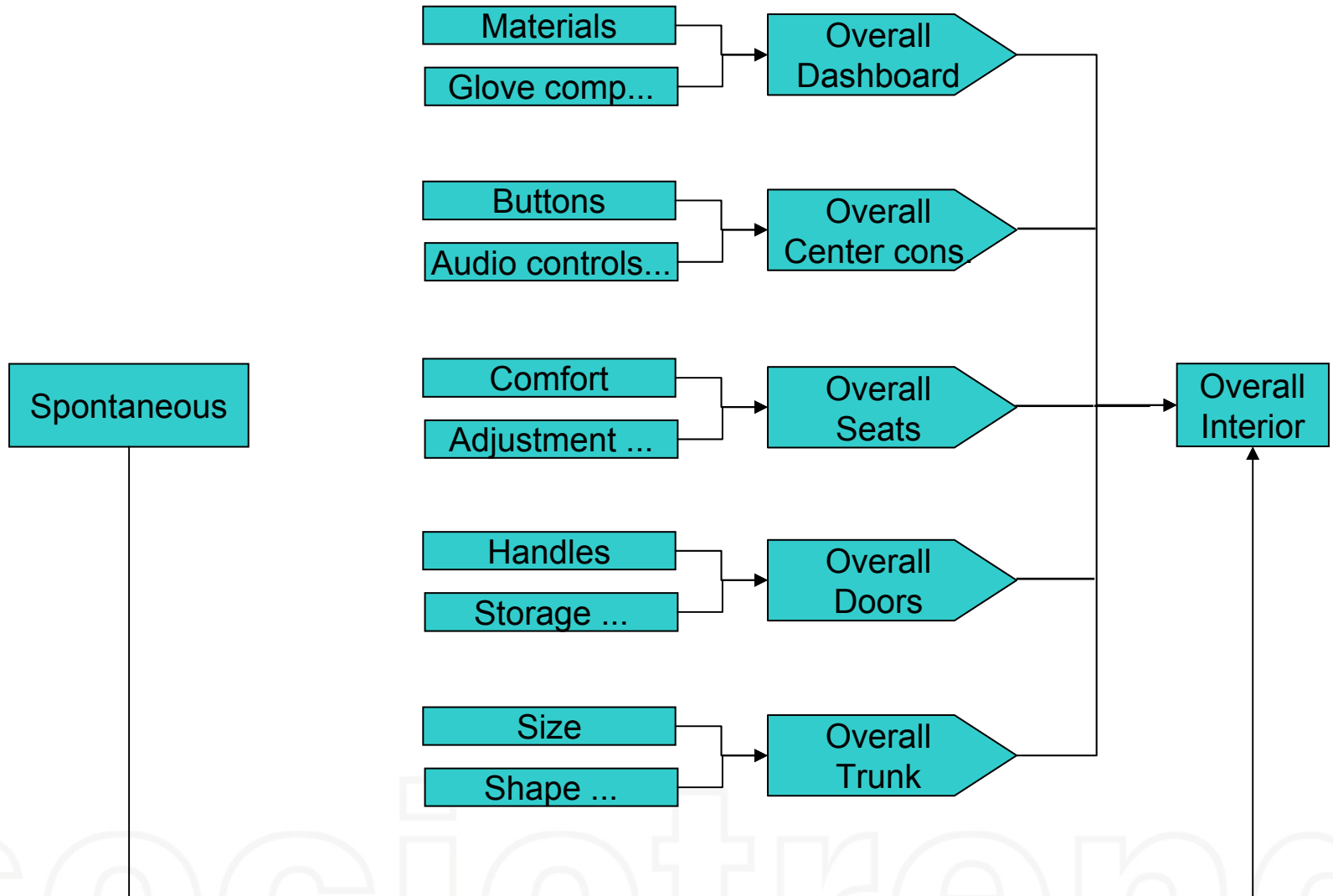
## Structuring data and identifying underlying effects:

- Factor analysis to identify underlying dimensions
- Multiple regression to identify latent causal relationships
- Multi-dimensional scaling for positioning of brands or models
- Correspondence analysis and property fitting to identify the properties of prototypes and models
- Cluster analysis for grouping individuals along preferences and/or attitudes

# Structuring data: Exterior

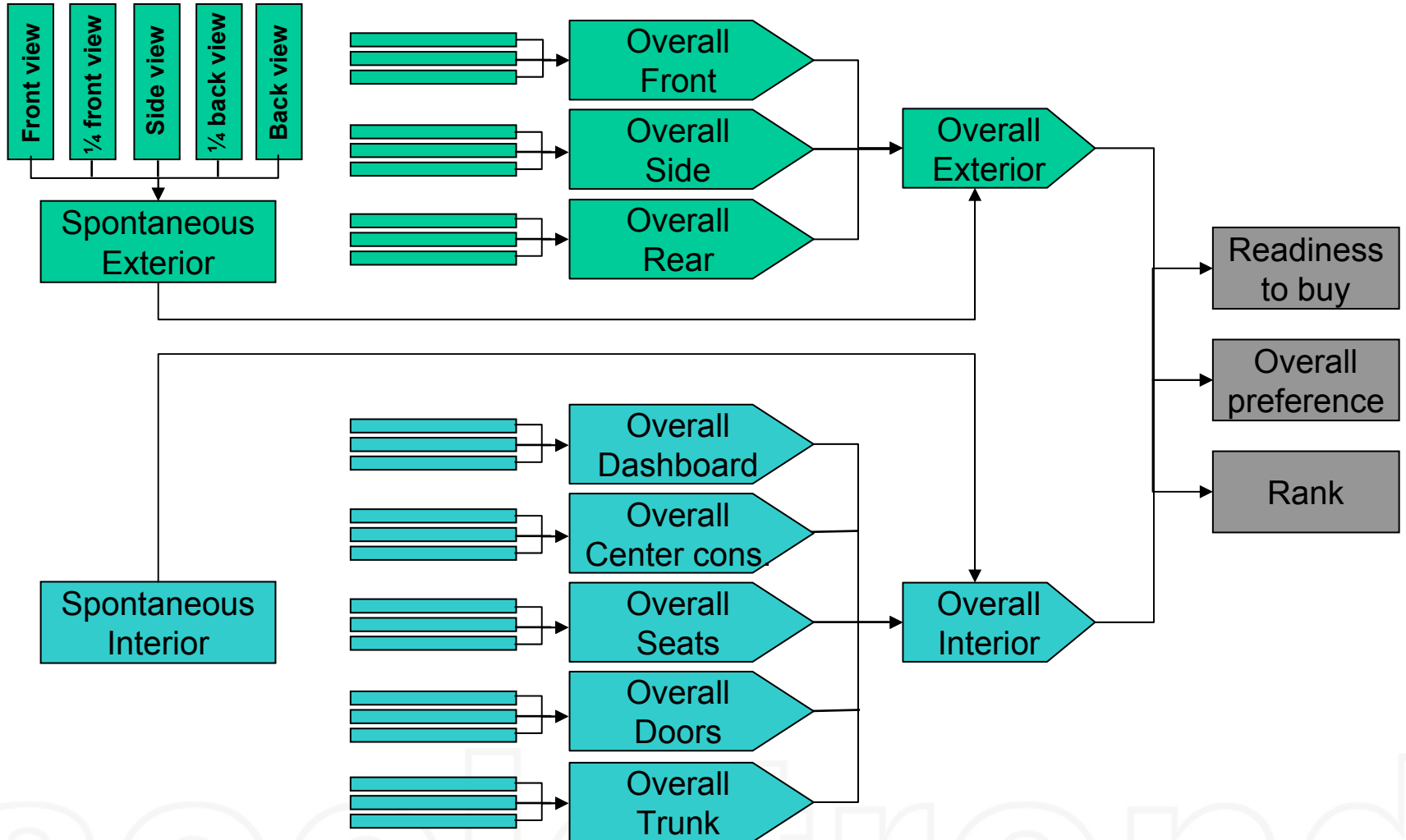


# Structuring data: Interior





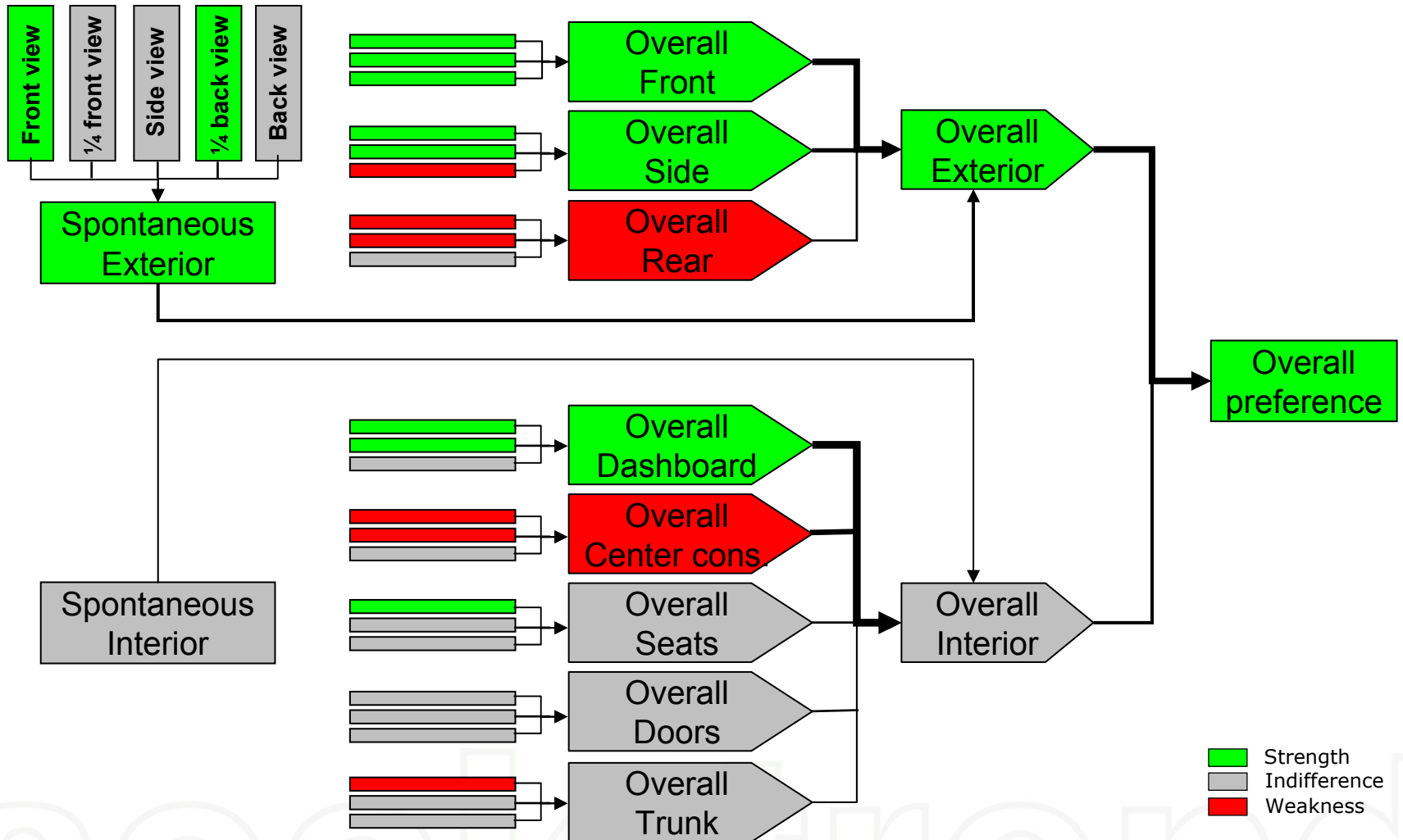
# Structuring data





## Data structuring and causal modelling

# Structuring data: Summary of relationships

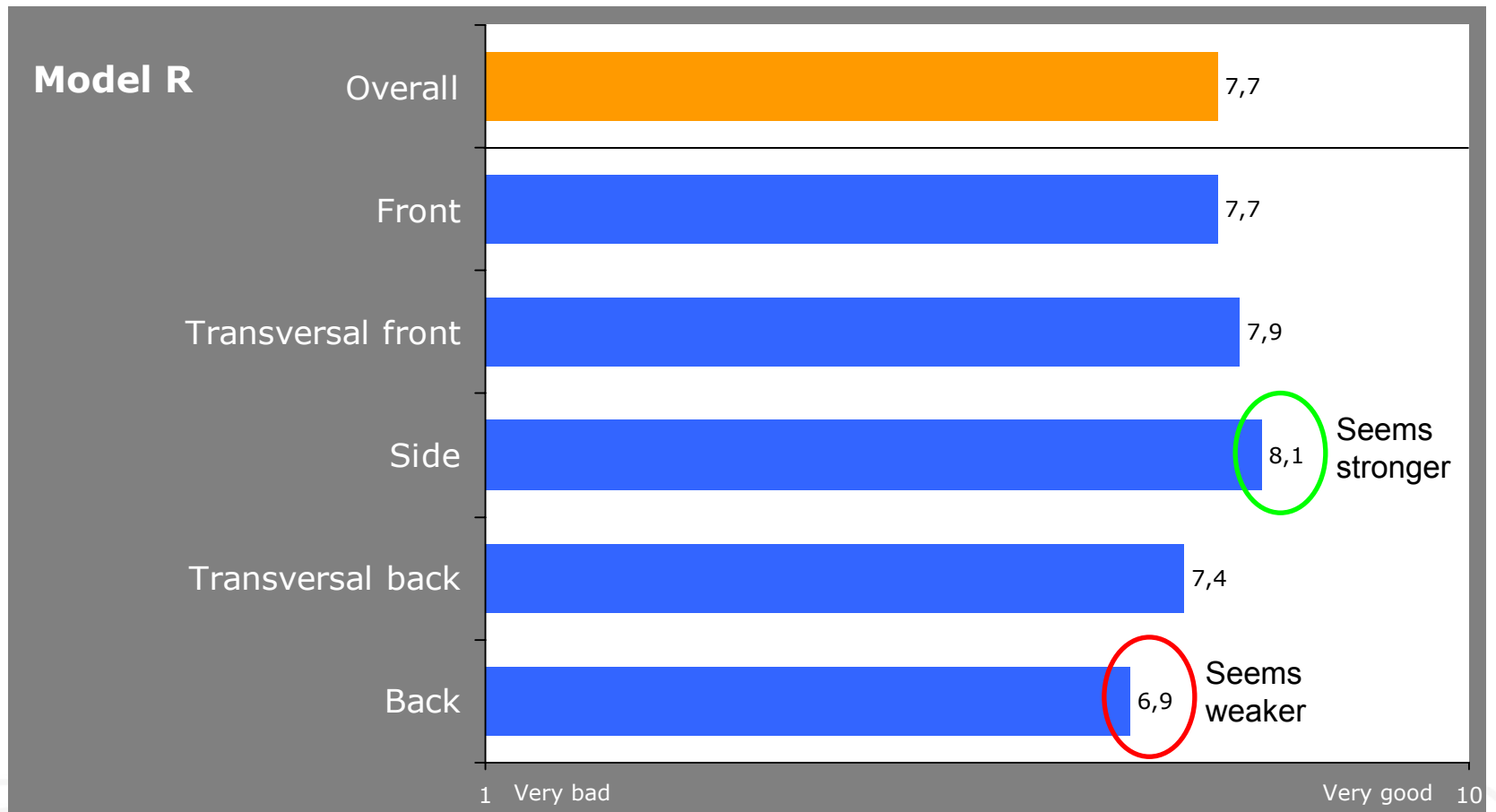




## Comparison of traditional analysis by means and advanced multiple regression models

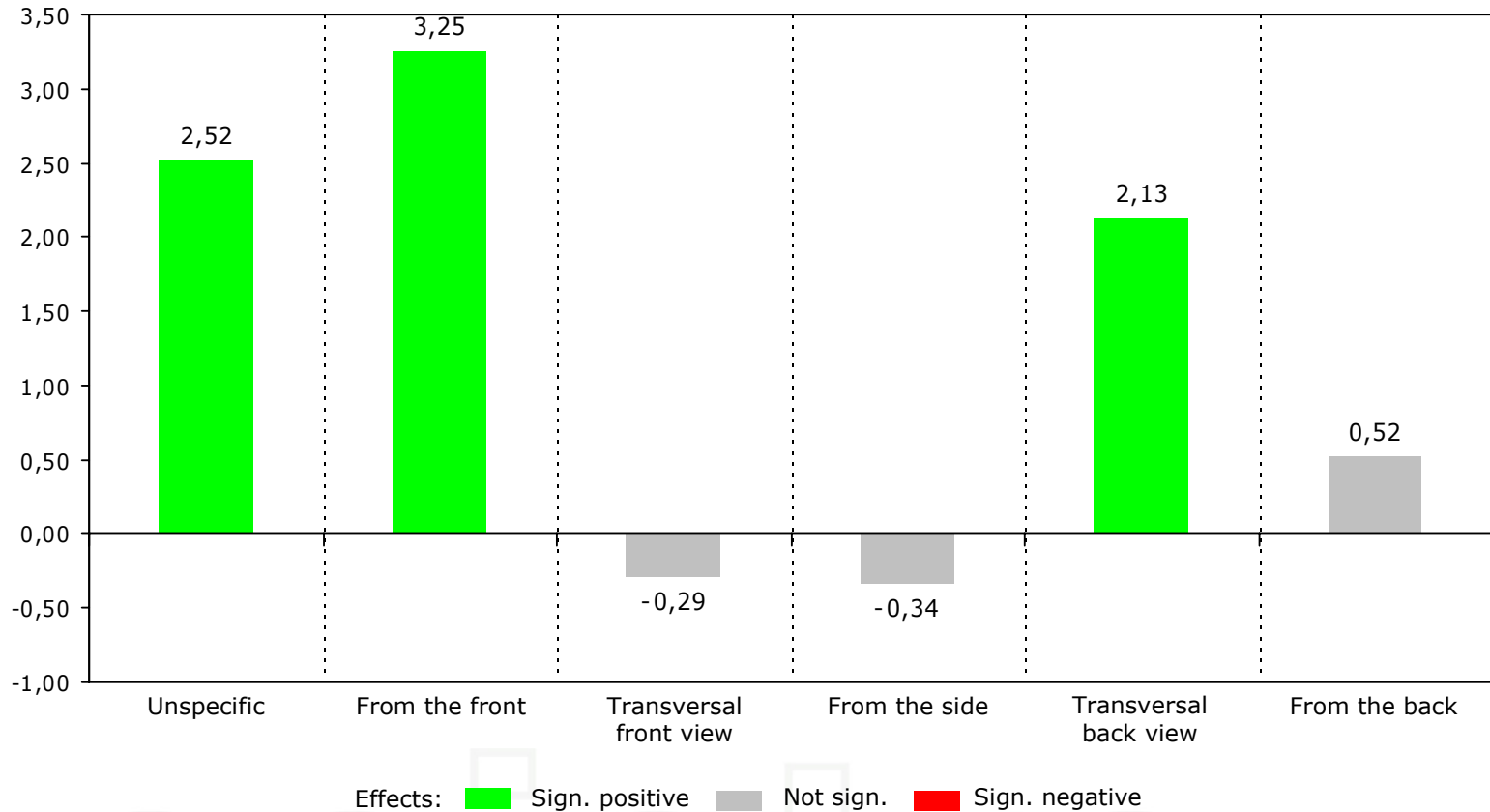


## 1. Example: Exterior perception from different positions





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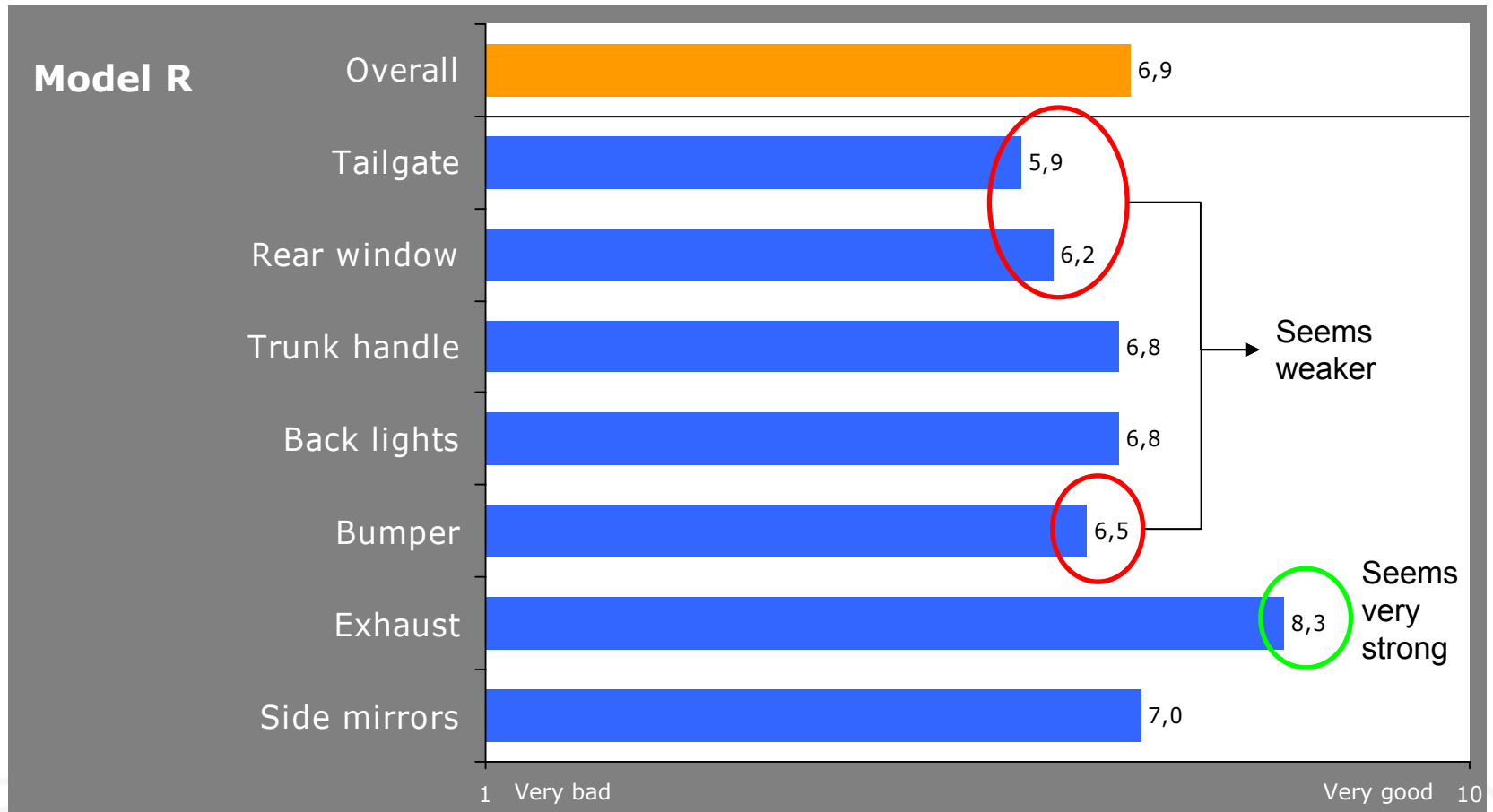




- Uni- and bivariate results do not reflect necessarily the complex relationships found by advanced multiple modelling
- Isolated positive effects (e.g. side view) may contribute negatively to overall exterior rating and vice versa. In our example, transversal back view has a strong impact on overall evaluation despite a "poor" isolated mean
- Average rated aspects (front view) on the other side may have a strong positive impact on global ratings



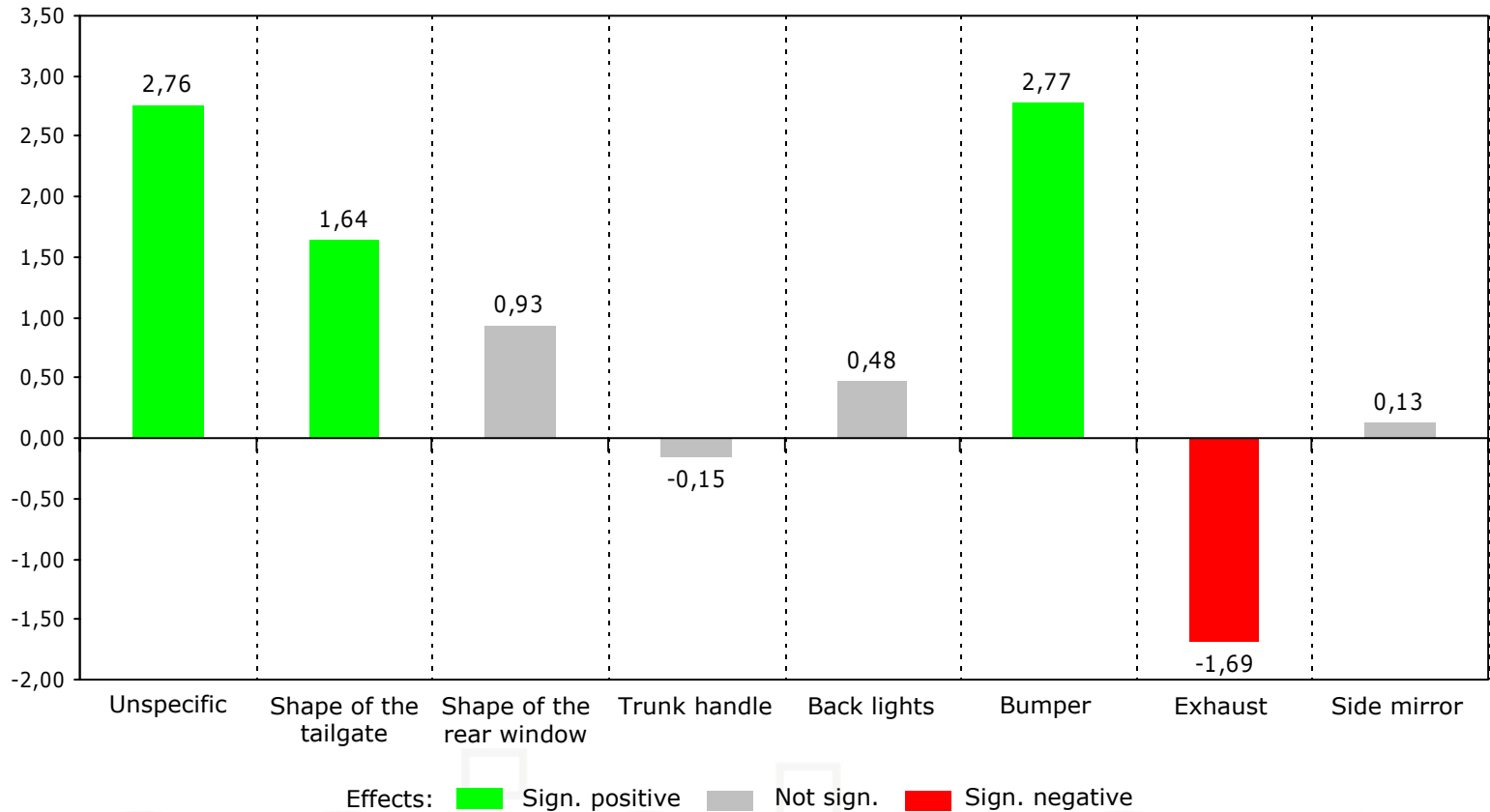
## 2. Example: Influence on back perception







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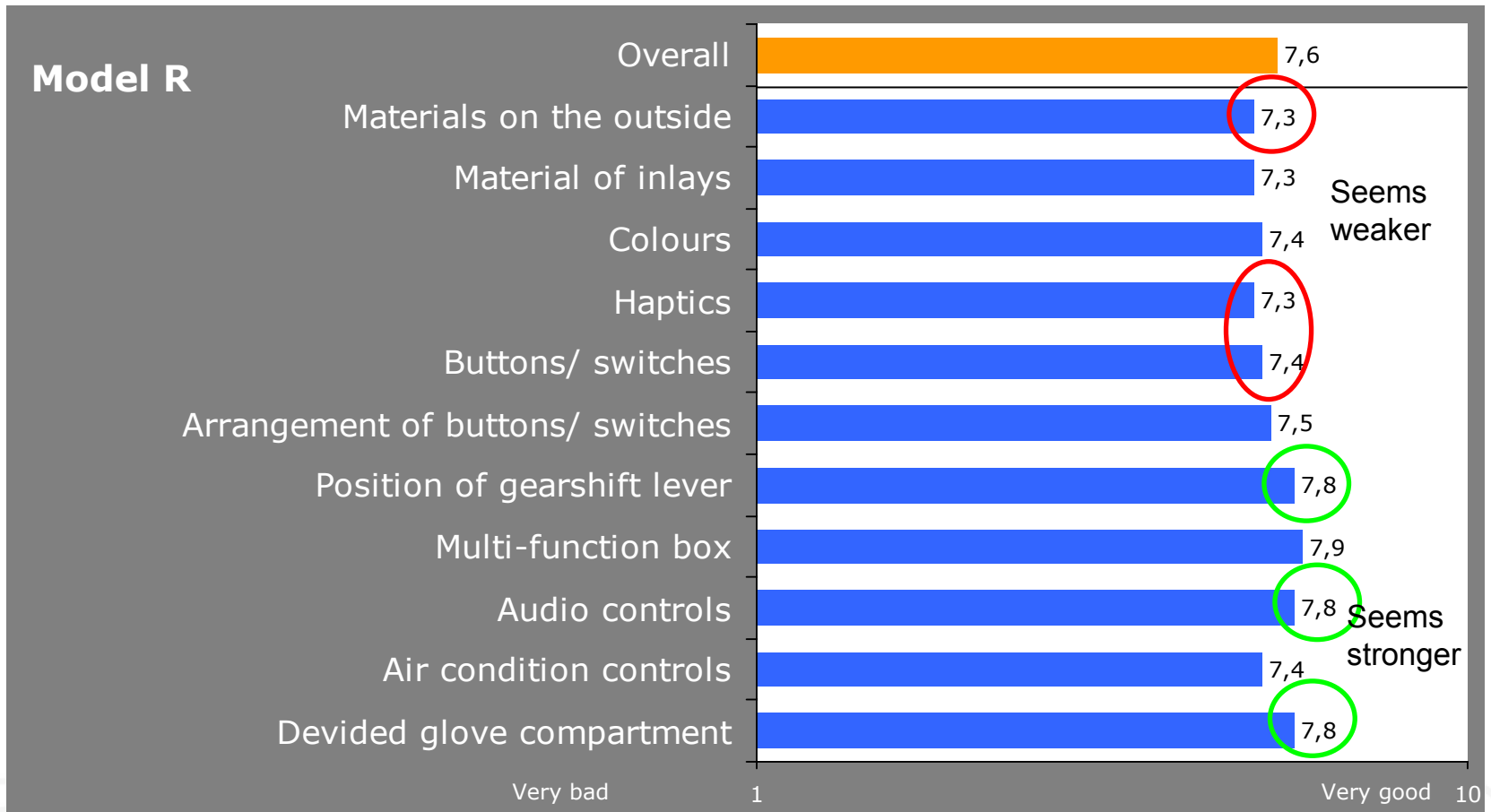




- In this example exhaust is rated very positively by respondents. But it is inaccurate to suppose (as suggested by isolated results) that it contributes to a positive perception of the back of the car as a whole
- The opposite is true: People being delighted by the look of the exhaust rated the back of the prototype negatively (and vice versa)
- It seems that the exhaust does not fit to the appeal of the back of the car. In fact, the exhaust was very sporty, the car (and its back), in contrast, was not. Thus people liking the sporty exhaust didn't like the (not sporty) car. Vice versa people liking the (not sporty) car disliked the (aggressive) exhaust
- This effect is not visible considering standard data analysis only

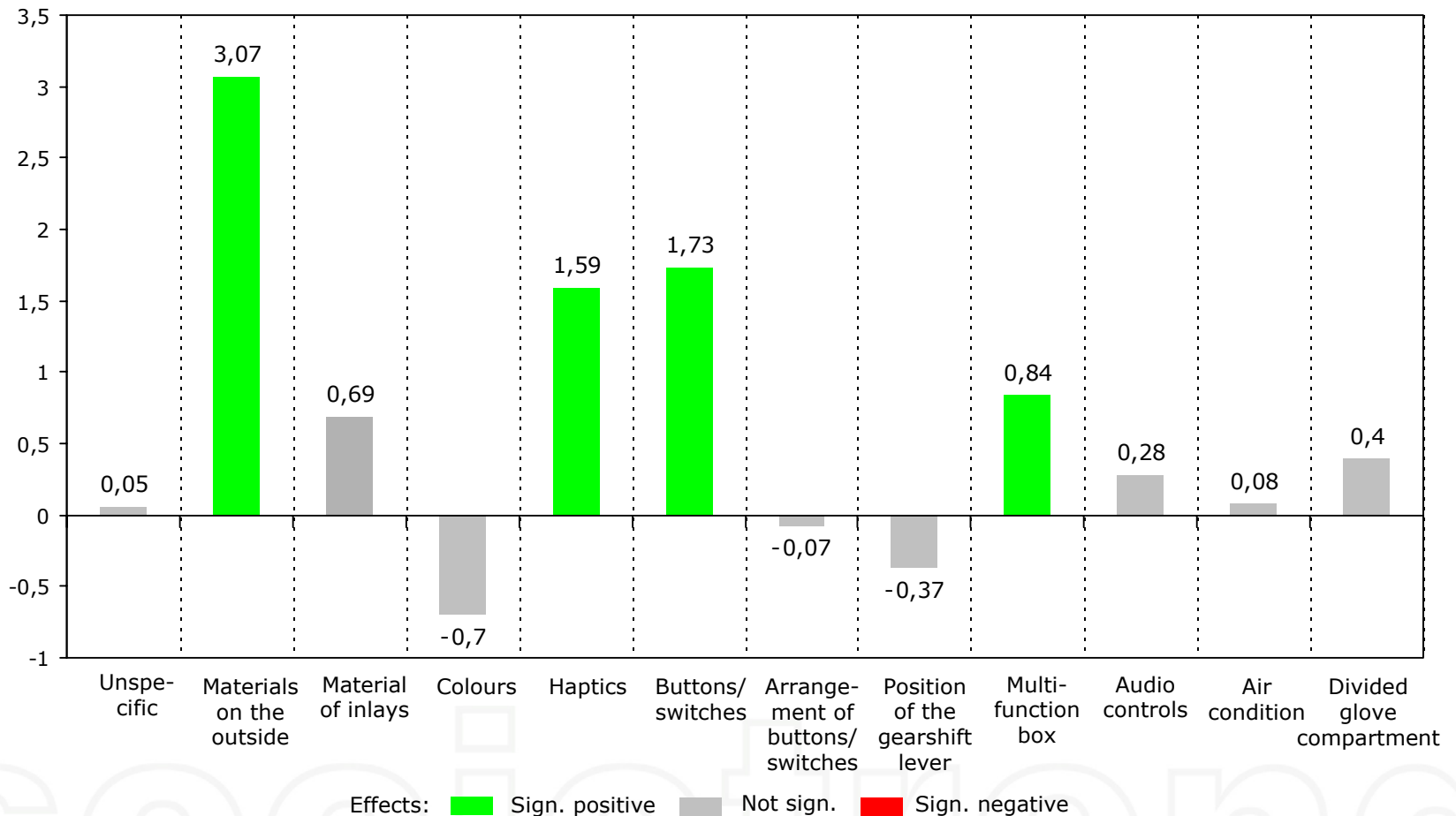


## 3. Example: Interior perception (centre console)





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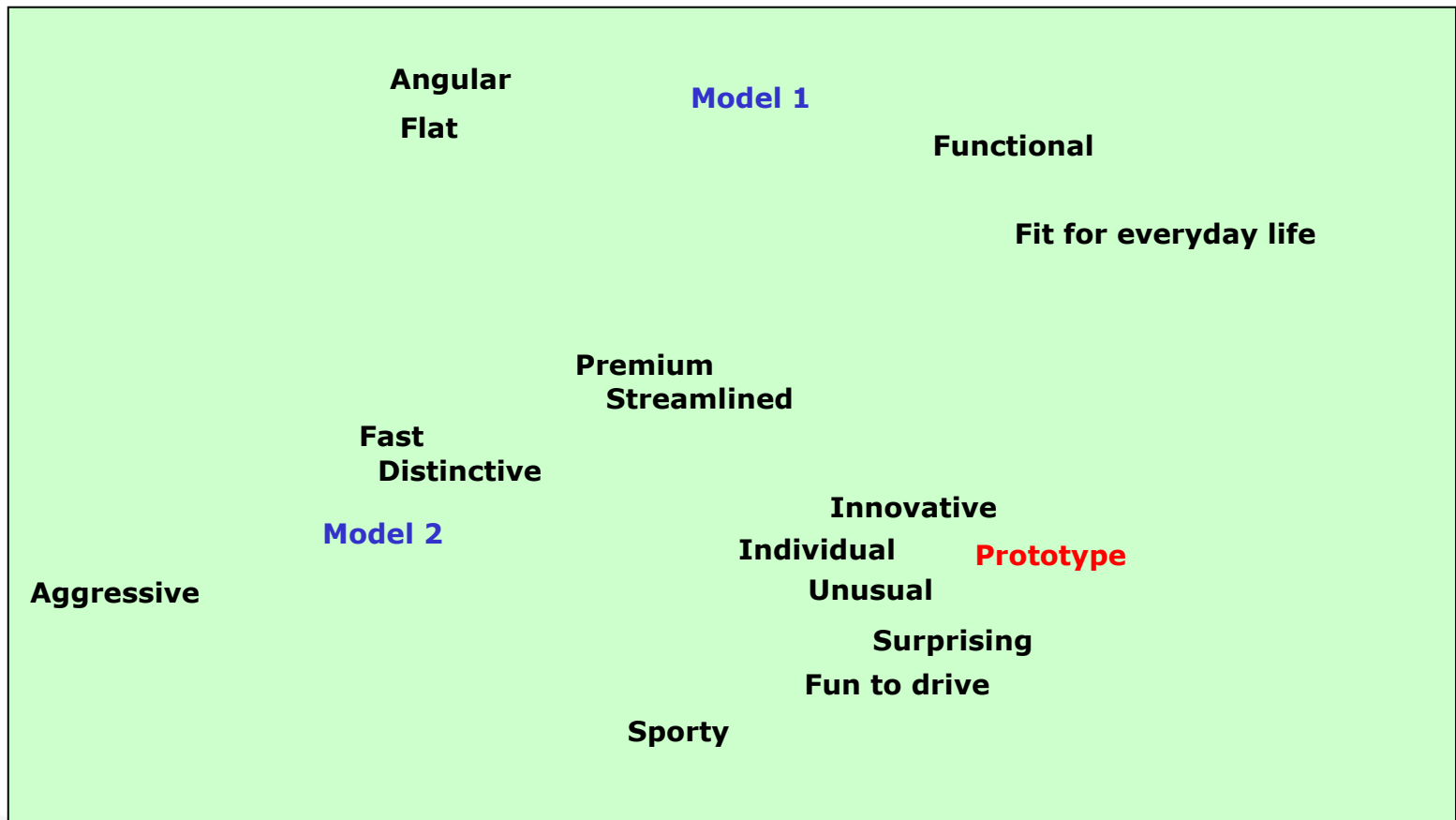
- Isolated consideration of means leads again to wrong assumptions about the effects of different aspects of the centre console
- The isolated ratings for position of gearshift lever, audio controls and divided glove compartment are pretty high, but the contribution of this elements to overall evaluation of centre console is quite poor
- The opposite is true for the lower ratings of materials on the outside, haptics and buttons/ switches. Despite the low isolated rating, causal modeling shows their strong impact on overall evaluation
- Only one aspects in this model is consistent with his isolated rating. The multi-function box is rated highest and has a (moderate) positive impact on overall evaluation of the centre console



More examples of advanced methodology



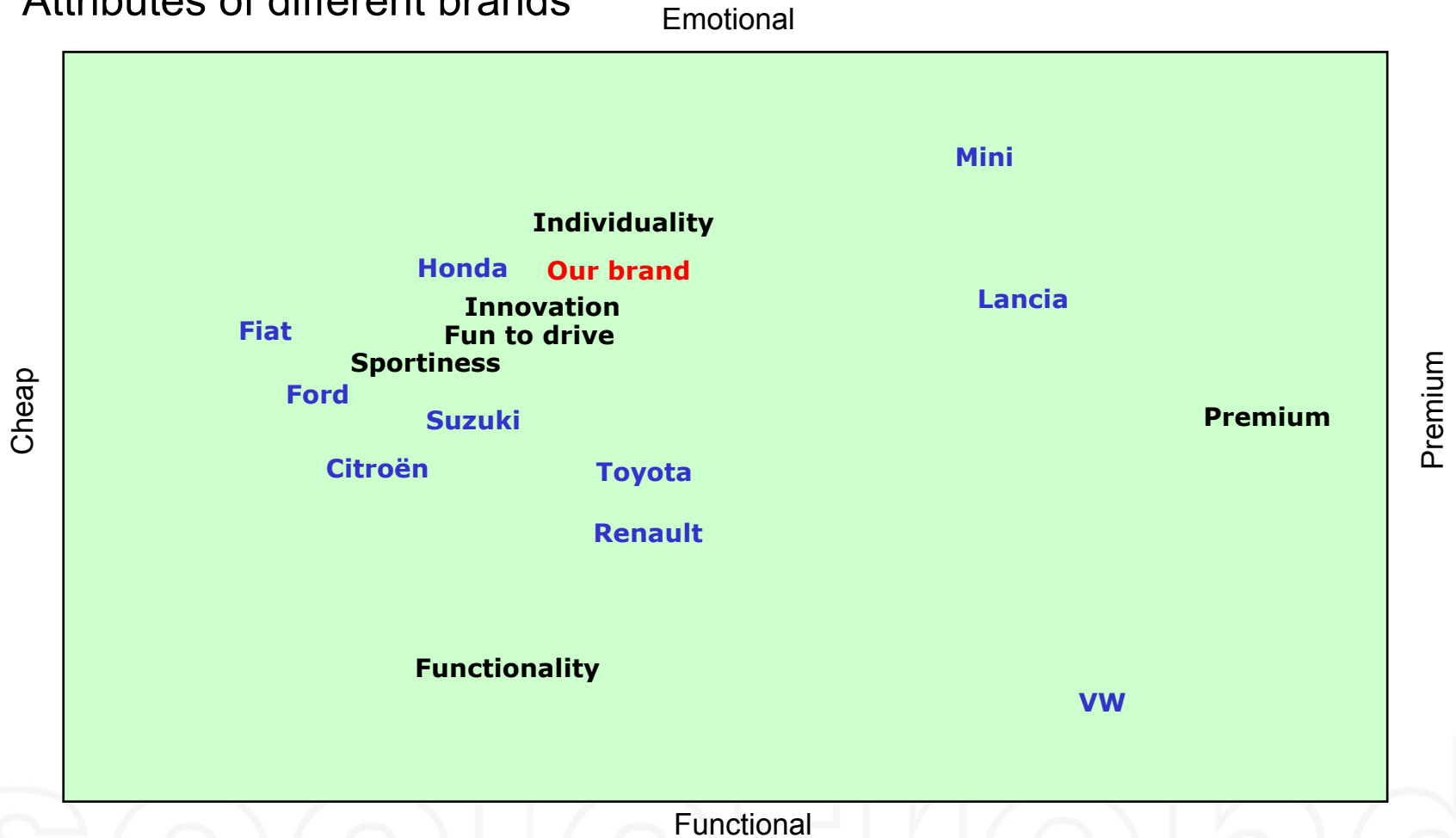
## Attributes of different models



# Correspondence Analysis (2)



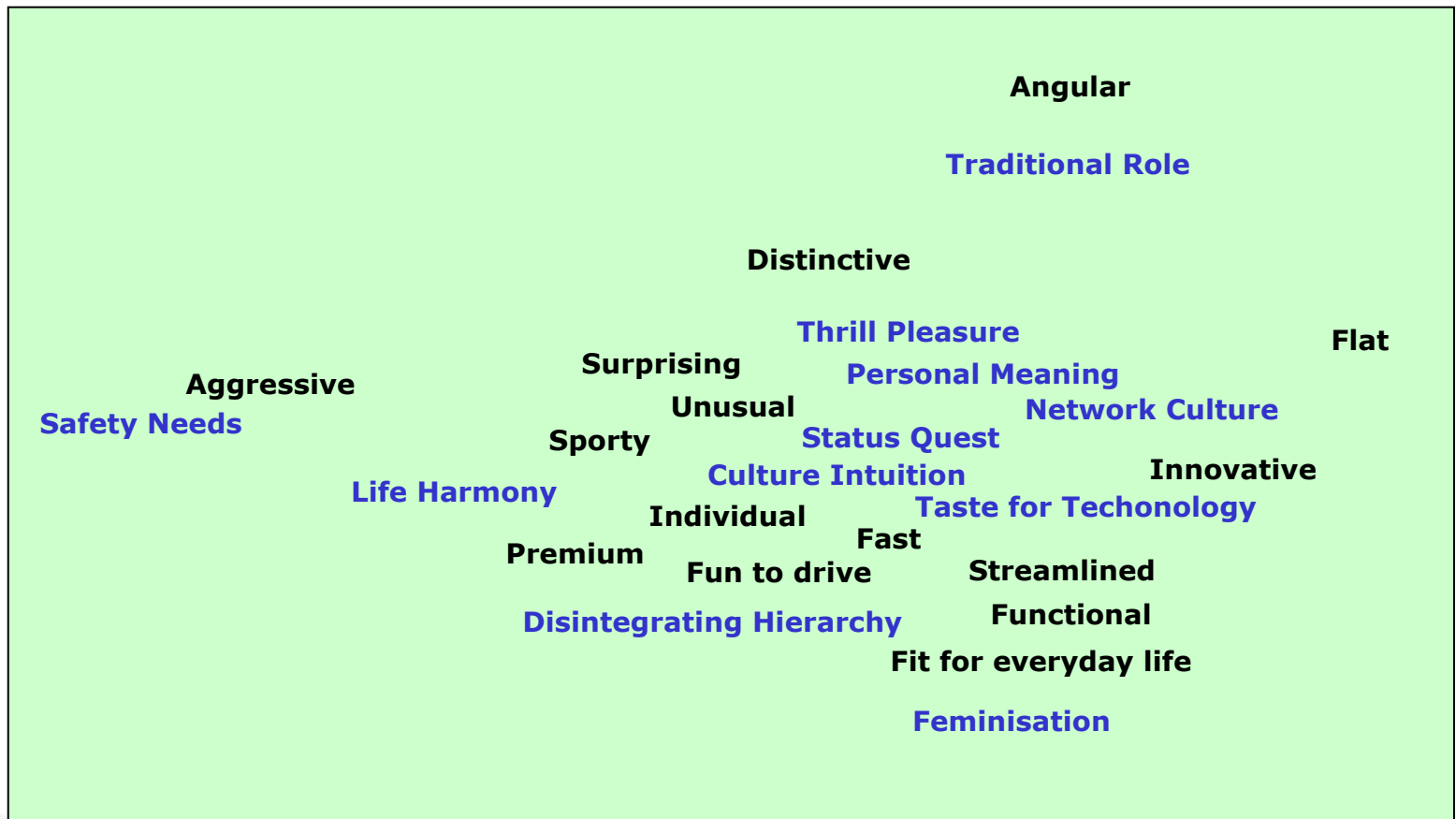
## Attributes of different brands





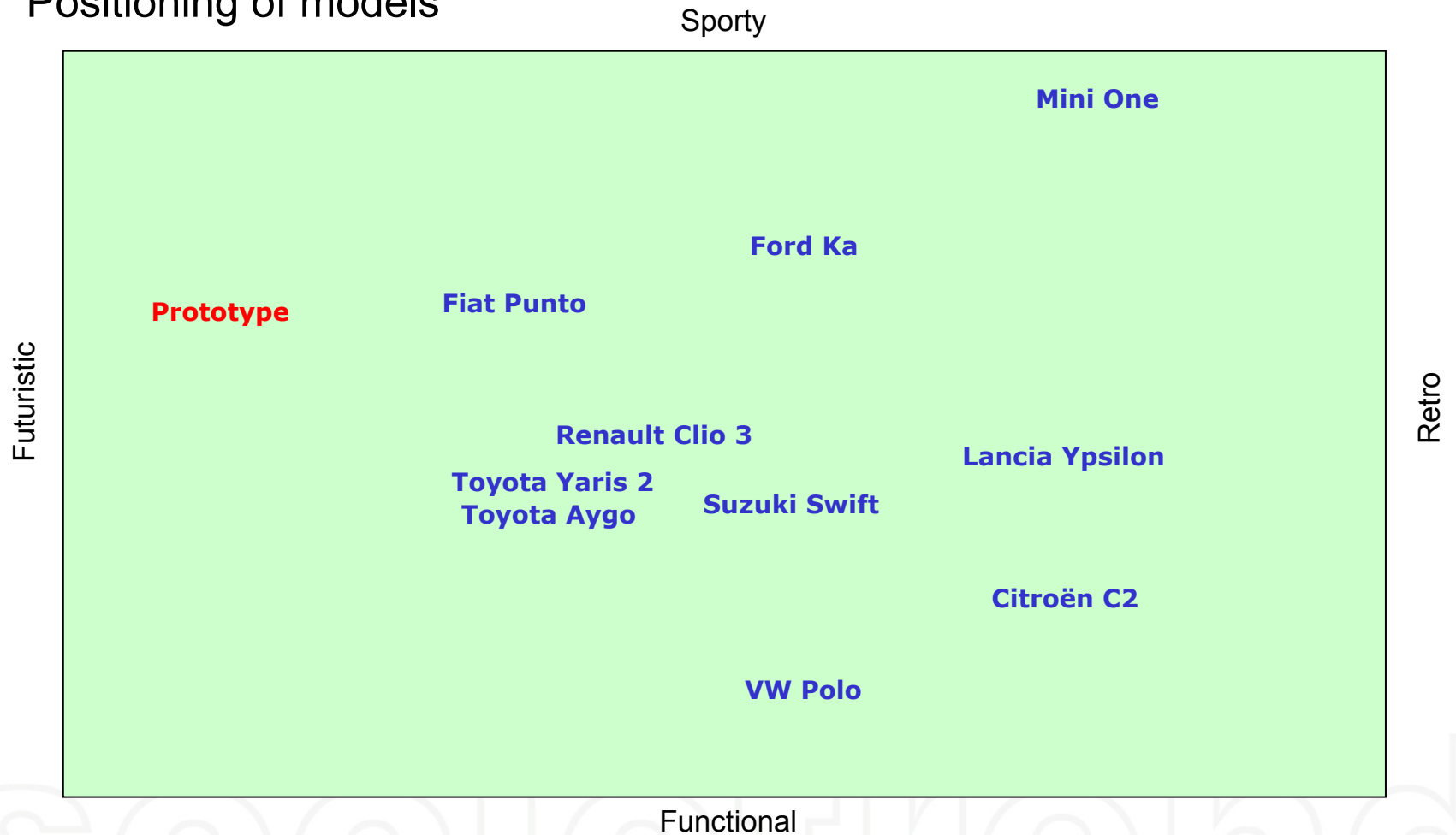


## Positioning of model attributes and personal trends





## Positioning of models

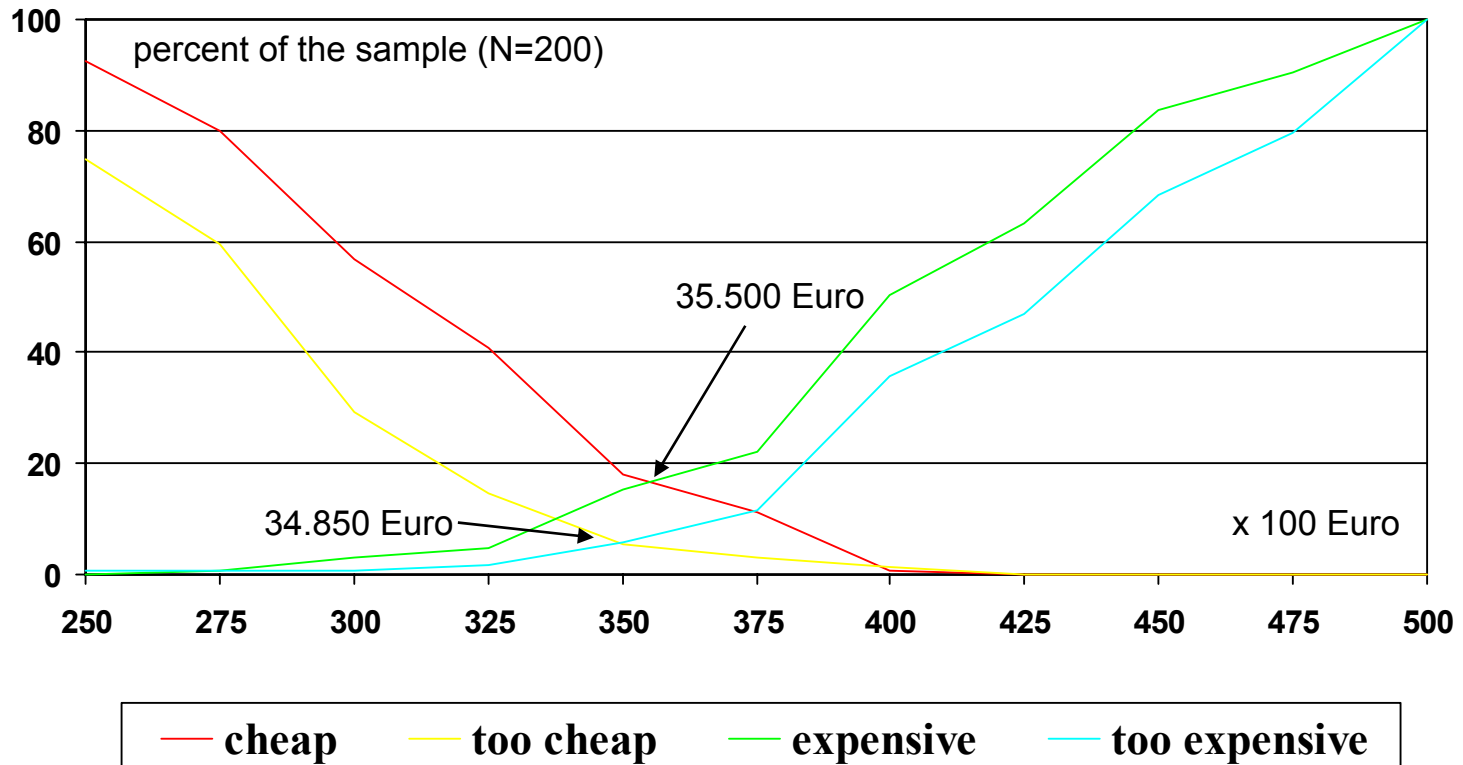




- Respondents are asked 4 price-related questions: At which price they consider the model to be:
  - Too Cheap (product quality is questionable)
  - Cheap (product is a bargain)
  - Expensive (model begins to seem too expensive)
  - Too Expensive (model is considered to be too expensive)
- The point at which the *Cheap* and *Expensive* responses intersect is called the *Indifference Price Point* (IDP). At this point, the model is perceived neither being cheap nor expensive
- The point at which the *Too Cheap* and *Too Expensive* responses intersect is called the *Optimal Price Point* (OPP). At this point, the number of respondents finding the price acceptable is maximized. This is the optimal point for positioning the model



## Optimal Price Point and Indifference Price Point





- Advanced techniques to measure attribute preferences and related readiness to pay for it are provided by Conjoint Analysis (CA)
- For this, relevant model attributes and prices were defined. Even hypothetical models can be compared and market shares can be simulated
- Main techniques in this field are Adaptive-Conjoint-Analysis (ACA) and Choice-Based-Conjoint-Analysis (CBC). For both methods an administration via CAPI is required, so an appropriate equipment has to be installed at the clinic
- Instead this effort, CA is able to provide accurate estimations of subjective preferences and the connected utilities (prices). Collected data may be used for a long time after the clinic to simulate markets



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