

# Products and product development



# Product development & Consumers' food perceptions - Total Food Quality model (Grunert, 2005)

- A framework for understanding how consumers perceive and make decisions to buy or not buy and eat or not eat food products and how they perceive the quality of food products.
- Quality – defined from a subjective sense, which includes all aspects that make a product attractive to the consumer.
- This model shows the complexity of all kinds of variables which influence consumer food choices and acceptance at different moments in time and on different levels of abstraction.

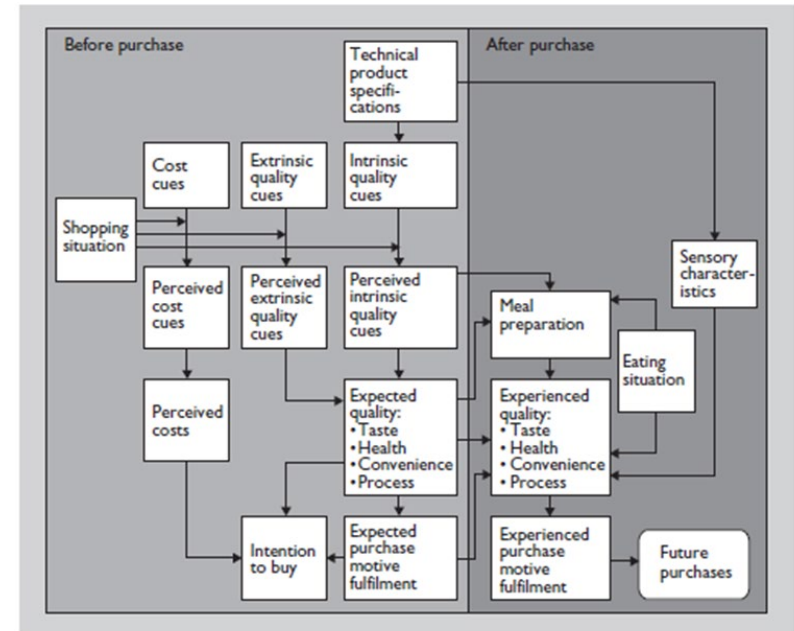


Figure 3.1. The Total Food Quality Model.

# Product development & Consumers' food perceptions

## - Total Food Quality model (Grunert, 2005)

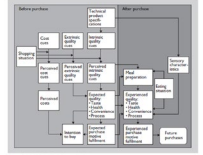


Figure 11: The Total Food Quality Model

### Explanation

How to understand the total food quality model:

- How consumers judge a food product is influenced by time, for example before and after purchase but also before and after eating. This is represented by the horizontal dimension of the model.
  - Expected quality (before purchase) and experienced quality (after consumption).
- Cues – pieces of information used to form expectations about quality.
  - Quality cues are both intrinsic (physical characteristics and objectively measurable such as colour, taste and texture) and extrinsic (all other characteristics which are added to a product such as brand, price, distribution, outlet, packaging).
  - Consumers talk about food and its characteristics on different levels (hierarchy of terms). Examples of general cues are 'healthy' and 'quality', whereas more concrete cues would be words like 'nutritious' and 'vitamin C' which relate to more specific characteristics. These more abstract values towards more concrete product cues is represented by the vertical dimension of the model

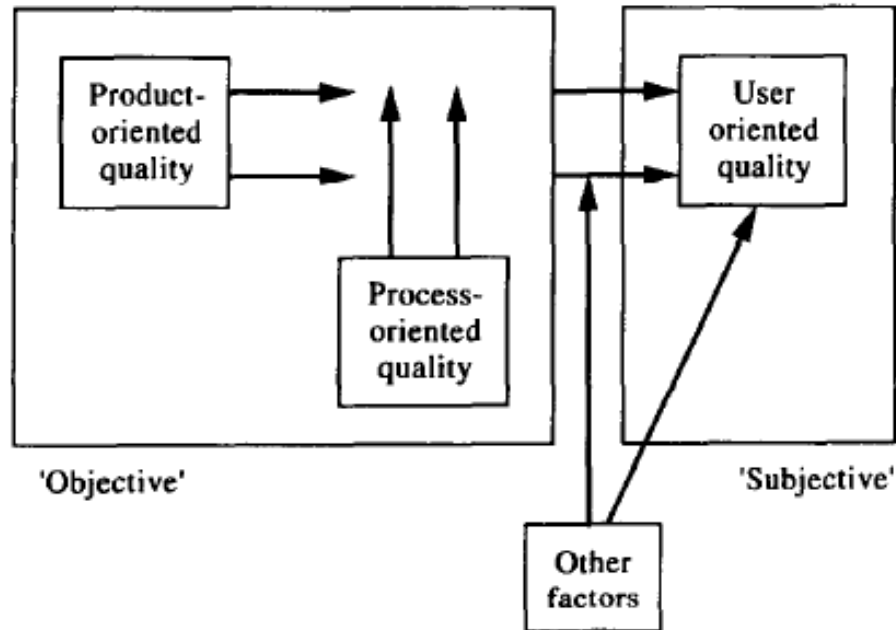
### Sources

- Grunert 2005 <https://pure.au.dk/ws/files/32302886/wp77.pdf>
- Bronso et al 2002
- Grunert, K. G., & van Trijp, H. C. M. (2014). Consumer-Oriented New Product Development. in: Encyclopaedia of Agriculture and Food Systems (pp. 375-386).

### Examples and/or assignment

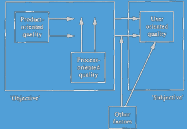
Assignment: Think about your weekly groceries or about what you eat every week. What do you consider to be important? What do you pay special attention to when you do your grocery shopping? What do you pay special attention to when you cook or eat at home? Did you consider the same product qualities to be important?

# Product development – Food Quality Perception (Grunert, 1995)



# Product development – Food Quality Perception (Grunert, 1995)

## Explanation



Overview of different types of quality - This model shows the different types of perceptions which describe food quality.

- The objective quality consists of the product-oriented quality and process-oriented quality, both of which can be measured with instruments.
- Product-oriented quality is measured by means of a food product's physical properties, like the fat percentage of milk, sugar content in tomatoes, etc.
- Process-oriented quality is the extent to which the product-oriented quality remains stable at pre-specified levels (i.e. certain levels of fat percentage, sugar in tomatoes, etc.).
- The subjective quality is the user-oriented quality. This is the quality perception of the user who can be the retailer or the consumer. This type of quality might differ between consumers and other subjects such as retailers. This user-oriented quality can be influenced by factors in addition to the product itself, like the purchase situation, the price or with whom the product is eaten.

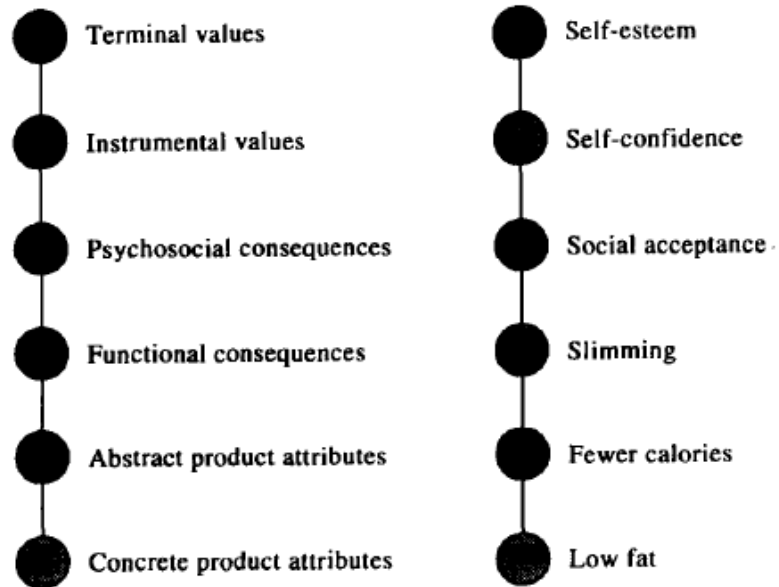
## Sources

- Grunert , K. G. (1995) Food Quality: a means-end perspective. Food quality and preference 6 171-176
- Grunert 2005 <https://pure.au.dk/ws/files/32302886/wp77.pdf>
- Bronso et al 2002
- Grunert, K. G., & van Trijp, H. C. M. (2014). Consumer-Oriented New Product Development. in: Encyclopaedia of Agriculture and Food Systems (pp. 375-386).

## Examples and/or assignment

- How does a company determine the quality of the ingredients, of the production process and of the end product? How are these measured?
- What do you, as the consumer, pay attention to when assessing food products? How do you assess this?

# Product development – Means-end chain (Grunert, 1995)

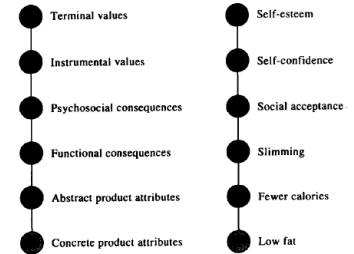


**FIG. 2.**

# Product development – Means-end chain (Grunert, 1995)

## Explanation

- The means-end chain is a model for consumers' cognitive structures depicting how concrete product characteristics are linked to personal consequences.
- More specifically, it demonstrates how concrete or abstract product characteristics are linked to the functional or psychosocial consequences of consumption, which in turn may be linked to the attainment of instrumental or terminal life values. Figure 2 provides two examples of the different levels of abstractness from consumer values to consequences and product attributes



## Sources

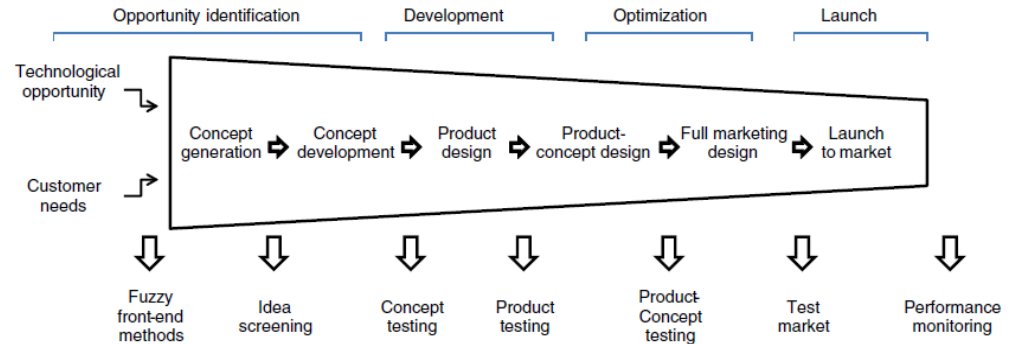
- Grunert, K.G. (1995) Food Quality: a means-end perspective. Food Quality and preference 6 171-176
- Grunert, K.G. (2005) Consumer behaviour with regard to food innovations: quality perception and decision-making In: Jongen, W.M.F and Meulenberg M.T.G Innovation in Agrifood systems Product quality and consumer acceptance.
- Grunert 2005 Author, year, title, etc. <https://pure.au.dk/ws/files/32302886/wp77.pdf>
- Other relevant sources: means-end chain

## Examples and/or assignment

- Here are a few values, consequences and attributes:
- Happiness, quality of life, safety, honesty, confidence, long and healthy life, looking good, enjoyment, guilt, health, more energy, natural products, environmentally friendly product, good taste, price, sweet, delicious, crispy.
- Divide these into values, consequences and attributes.

# Product development model – Formal gateway process (Grunert and Van Trijp, 2014)

- This model presents the different phases of consumer-oriented new product development. In this model technological and customer needs are combined.
- Different methods are presented below the funnel to explore and test consumer needs and wishes related to ideas, concepts and test products.
- This model shows the need for a multidisciplinary approach in which insights about consumer and customer needs are combined with insights about technological opportunities.





# Product development model – Formal gateway model (Grunert and Van Trijp, 2015)

<b>Explanation</b>	<p>How to understand the formal gateway model:</p> <ul style="list-style-type: none"><li>▪ The model divides new product development into four phases starting with opportunity identification, development, optimisation and launch.</li><li>▪ There are six phases in which technological insights and consumer and customer needs should be combined in order to generate ideas and concepts and to develop these into successful new products.</li><li>▪ Research methods to explore consumer and customer needs are given for each phase.</li></ul>
<b>Sources</b>	<ul style="list-style-type: none"><li>▪ Grunert, K. G., &amp; van Trijp, H. C. M. (2014). Consumer-Oriented New Product Development. In Encyclopaedia of Agriculture and Food Systems (pp. 375-386).</li><li>▪ Grunert 2005 Author, year, title, etc. <a href="https://pure.au.dk/ws/files/32302886/wp77.pdf">https://pure.au.dk/ws/files/32302886/wp77.pdf</a></li><li>▪ Bronso et al 2002</li><li>▪ ....</li></ul>
<b>Examples and/or assignment</b>	<p>Assignment: Think about a new product. Which questions does the product give rise to and to which phase of the development process do they belong?</p>

# Consumer-oriented new product development model (Grunert, 2005)

- Consumer-oriented product development: the starting point of new product development should be a positioning of the product in terms of the qualities which are desired by consumers, because they tap into the consumer's life values thus creating motives for purchasing.
- This positioning of the product in terms of values has to be translated into a physical product in the product development process. The physical product will result in consumer exposure to certain intrinsic cues which result in the perception of quality both before and during the purchase and during preparation and consumption. These have to be complemented by the right set of extrinsic cues, so that the overall quality perception corresponds to the positioning. The set of desired extrinsic cues has to be implemented by packaging, advertising or other communicative means. The communication and the physical product should link the product to the same set of consumer life values, thus supporting each other in triggering the same purchase motives

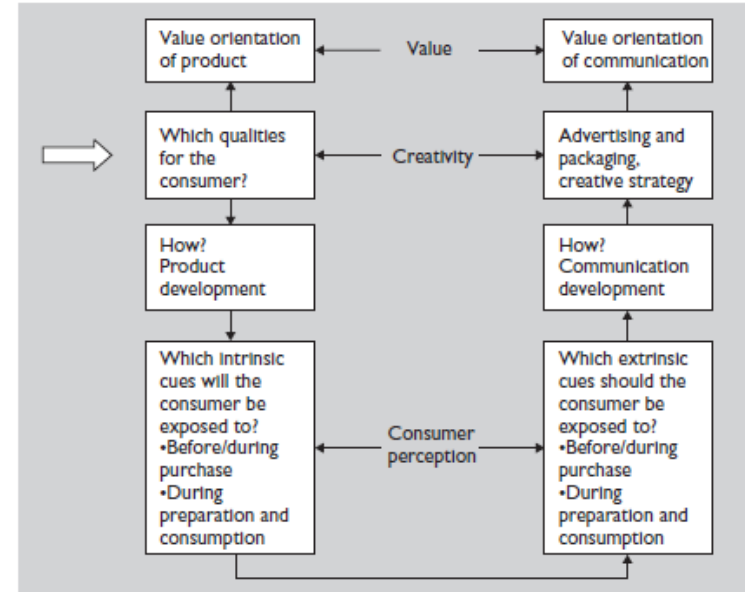


Figure 3.11. A model of consumer-oriented new product development.

# Overview of methods to be applied when gathering consumer insights for product development (Van Kleef et al., 2005)

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*E. van Kleef et al. / Food Quality and Preference 16 (2005) 181–201*

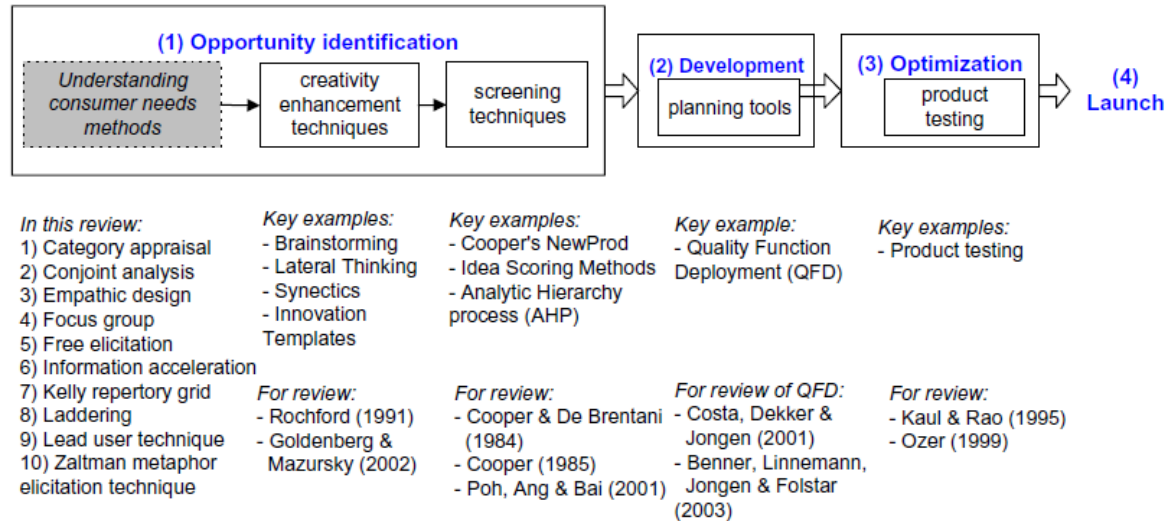


Fig. 1. Overview of stages of new product development process along with representative consumer research methods and key references for reviews.]

# Overview methods (Van Kleef et al., 2005)

## Explanation

- The publication by van Kleef describes the methods that can be used in the various phases of product development to gain consumer insights.
- Incorporating the 'voice of the consumer' in the early stages of the new product development process has been identified as a critical success factor for new product development. Yet, this step is often ignored or poorly executed. This may be due to lack of awareness about which methods are available, the use of discipline-related terminology and the difficulty of accessing papers on this subject. This paper reviews and categorises ten of the most common methods in this area in terms of what their key features are and what their strengths, weaknesses and suitability are. We develop a classification scheme based on three performance dimensions with specific criteria: (1) stimuli used as a cue for need elicitation, (2) task format and (3) need actionability. We provide guidelines for the suitability of these methods in the new product development process based on the newness strategy of the development process (radical versus incremental innovation) and identify which functional department (marketing versus R&D) the method should primarily support

## Sources

- Van Kleef et al (2005) Consumer research in the early stages of new product development: A critical review of methods and techniques. Food Quality and Preference 16 (2005)3. - ISSN 0950-3293 - p. 181 - 201.

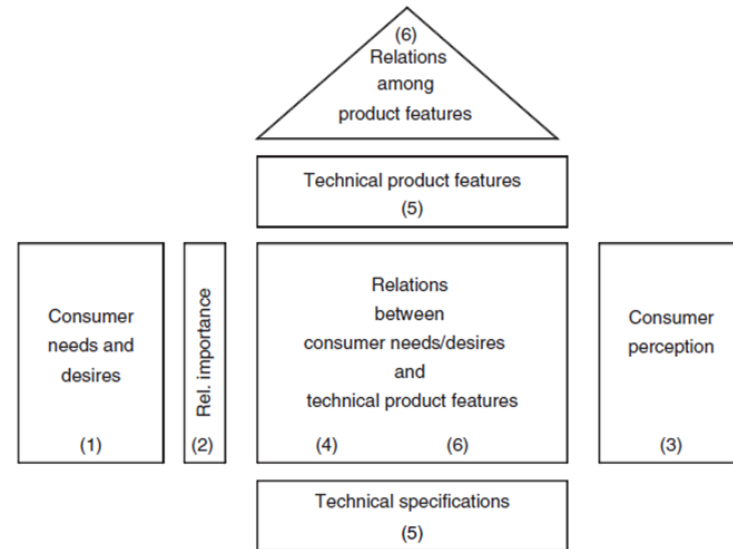
## Examples and/or assignment

- Link to the wiki?
- Which questions do I want to have answered and in which phase of the development am I currently? Do I want exploratory qualitative research? Do I want to know how large certain groups are (quantitative research)?

# New product development – Quality Function Deployment

## Further reading application of QFD on fruit:

Special issue Scripta Horticulturae (2012): The interdisciplinary ISAFRUIT- Vasco da Gama process and its resulting House of Quality method: The next step towards sustainable fruit production while addressing consumer demands with critical problem-oriented research  
Edited by: Luca Corelli Grappadelli, Pasquale Losciale & Lukas Bertschinger



**Figure 4** The House of Quality within Quality Function Deployment. Adapted from Van Trijp, J.C.M., Steenkamp, J.E.B.M., 2005. Consumer-oriented new product development: Principles and practice. In: Jongen, W.M.F., Meulenberg, M.T.G. (Eds.), Innovation in Agri-Food Systems: Product Quality and Consumer Acceptance. Wageningen: Wageningen Academic Press, pp. 87–124.

# Quality Function Deployment - Example

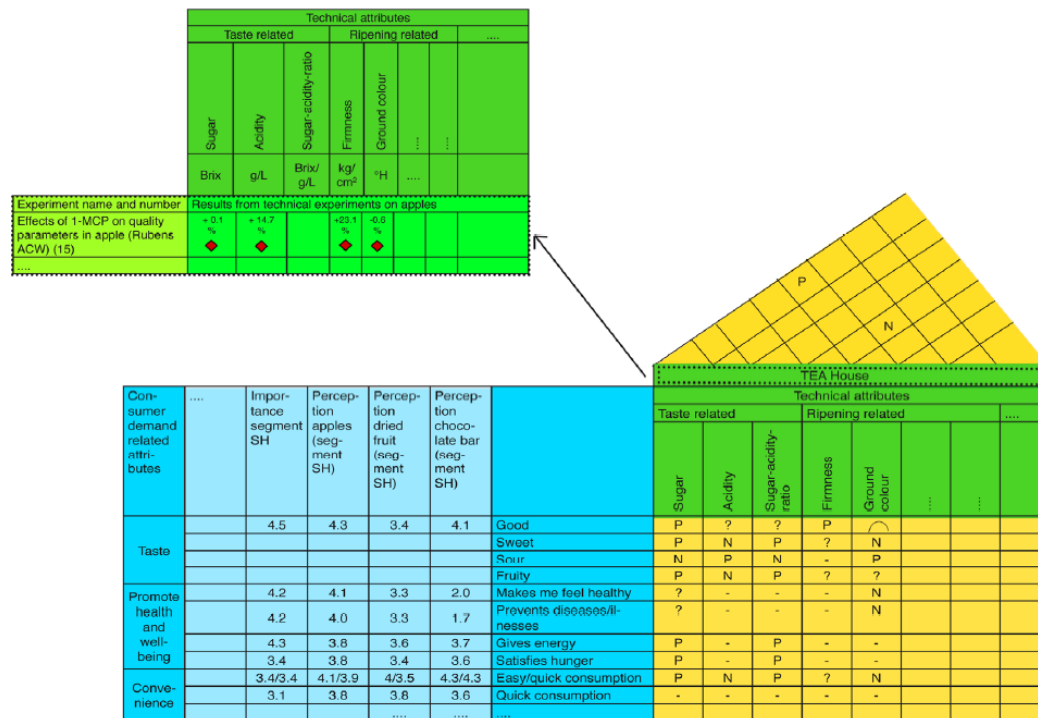


Fig. 2. Excerpt from the ISAFRUIT House of Quality, including an excerpt of the TEA house on the upper left. Note: all parts displayed are for explanatory purposes. Specific linkages and results are not suitable for referencing. For the most actual version of the House of Quality with the linkages established so far, see [www.isafruit-vgd.ch](http://www.isafruit-vgd.ch).