

## Health perception and food attributes

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### Abstract

*Consumers' perception of health related to food products, characteristics, ingredients and attributes is measured in a qualitative and quantitative approach. Cognitive aspects as well as affective aspects are taken in consideration.*

*In the perspective of health perception consumers talk in terms of unprocessed, nutritious, fresh, and natural attributes, as well as affective aspects like appetizing, happy and enjoy. Different groups of consumers have their own perception of health. Depending the target group and the product the health perception of consumers is correlated to specific attributes and affective aspects.*

### Introduction

Food is part of everyday life and few things have changed more drastically in the last century than the way food is produced, processed, distributed, marketed and consumed.

The food perception model (Sijtsema, Linnemann, Van Gaasbeek, Dagevos & Jongen, 2002) represents the four main determinants of food perception, that is, individual consumers (demography, physiology, psychology, attitudes), environment (family, society), product (product characteristics, production system) and consumption moment (time, place). Based on this model the research field is demarcated to get insight in consumers' perception of health in a qualitative and quantitative approach. The aim of this study is to measure consumers' health perception and relate this healthiness to traditional Dutch meal components in terms of attributes, characteristics, ingredients and affective aspects.

### Materials and methods

In expressive and associative group discussions with female consumers (4 sessions 6 participants each), health perception and experiences were discussed based on non-verbal expressions, viz. drawings and abstract paintings made by participants themselves to unravel health perception in consumer terms.

By means of a questionnaire (N=344) these insights were related to the perception of eight traditional Dutch meal components in terms of attributes (unprocessed, nutritious, fresh, natural, organic) ingredients (fat, protein etc) and affective (happy, appetizing, enjoy).

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## Results

The participants of the qualitative research discussed feelings (enjoyment and happiness), associations (e.g. season, water, sun), specific products (e.g. vegetables, fruits) and ingredients (e.g. vitamins, fibres, minerals) and production (organic). (Sijtsema et al., 2007) These insights from the qualitative research were then related to characteristics, ingredients, affective and production aspects for eight traditional Dutch meal components. (see Figure 1)

**Health** - The eight meal components were perceived differently with respect to their health-supporting properties. Vegetables were judged as the most healthy component, in contrast to fries and ice cream, which were perceived as unhealthy. The alternative products for the same meal component were judged to be significantly different for human health (e.g. broccoli is considered to be healthier than lettuce). The products perceived as healthy and unhealthy are described in this text as healthy or unhealthy products to indicate that the respondents distinguish them as such. The authors are aware that a product in itself is not healthy or unhealthy, but can be part of a unhealthy or healthy diet.

**Attributes** - Steptoe, Pollard and Wardle (1995) found an association between 'healthy' and 'natural'. In this study nearly all of the products received a significantly different score on 'healthy' and 'natural', except for beefsteak, which scored the same on 'natural' and 'healthy'. For products perceived as healthy, the 'natural' score is a little less than that for the 'health' score. The unhealthy perceived products score less negative on naturalness than on healthiness. Nearly all products were perceived as nutritious; fries were regarded as neutral and ice cream as not nutritious by the respondents. Thus, in the perception of consumers, only healthy products can be nutritious.

**Characteristics** - The products perceived as being good for human health (broccoli, lettuce, yoghurt) were perceived more positive on 'organic' than the other products. However, the proposition about 'organic' may have confused respondents in the sense that some of them do not know what is exactly meant by this characteristic, namely refraining the use of agro-chemicals. So, probably 'organic' is interpreted in different ways. Nevertheless it is not surprising that organic is related to health according to, for example, Schifferstein and Oude Ophuis (1998) and Torjussen, Lieblein, Wandel & Francis (2001).

Products sold packed in the shop, score high for 'packed'. Respondents apparently judge according to their internal standard or with the product they are familiar with in mind. It could not be tested whether 'packed' influences health perception. Apparently, the terms used for product characteristics ("packed", "long-lasting" and "organic") were not unambiguous enough to get insight in the relation with health perception.

**Ingredients** - The respondents stated that they do not eat the meal components because of their ingredients (e.g. carbohydrates, fat, protein, vitamins); the three exceptions were broccoli and lettuce (for their vitamins) and yoghurt (for its protein). Consequently, the respondents do not link the composition of the meal components to whether they eat it or not.

**Affective aspects** - All eight products are enjoyed when eaten and are perceived as appetizing or, in other words, appealing. Fries, ice cream and yoghurt have the highest score on appetizing. The eating of most of the products does not make the respondents happy, except for ice cream and fries, which have a neutral score. It is

notable that beefsteak scores most negatively on 'making happy' compared to the other meal components. Respondents do not see a relation between a product and feeling happy; this might be different, though, if the context would be integrated into the research design.

**Consumer segments** - Cluster analyses based on health opinions of consumers produced four clusters of consumers: (1) healthy and not ill unrelated, (2) no interest in health, (3) feeling healthy, and (4) with health problems, with sample percentages of 21, 10, 50 and 18, respectively. The four clusters do not differ in their perception of health, attributes, characteristics, ingredients and affective aspects for the meal components. Nearly all clusters relate health and attributes; natural, fresh, nutritious and unprocessed for each meal component. But the clusters differ in their perception of health and its link to ingredients and affective aspects. More precise, the cluster 'feeling healthy' relates 'enjoy', 'happy' and 'appetizing' with health for lettuce, beefsteak, pork chops, rice and ice cream.

### **Conclusion**

The expressive and associative group discussions proved to be a promising, fascinating and participant-friendly approach to gain an insight into the affective and the cognitive aspects that consumers relate to health-promoting product characteristics.

This approach provides an insight into the aspects of a meal component that are related to health perception: not only ingredients, attributes and characteristics but also affective aspects are related to health in the perception of consumers. Health perceptions of consumers differ for target groups, products and affective aspects. So, when producing a product perceived as healthy, product features on different levels must be taken into consideration to make the product a success in the market.

### **Reference**

- Schifferstein, H. N. J., and Ophuis, P. A. M. O. (1998). "Health-related determinants of organic food consumption in the Netherlands." *Food Quality and Preference*, 9, 119-133.
- Sijtsema, S., Linnemann, A., Gaasbeek, T. v., Dagevos, H., and Jongen, W. (2002). "Variables influencing food perception: reviewed for consumer oriented product development." *Critical Reviews in Food Science and Nutrition*, 42(6), 565-581.
- Sijtsema, S., A. Linnemann, G. Backus, W. Jongen, T van Gaasbeek, H. Dagevos (2007) Exploration of projective techniques to unravel health perception. *British Food Journal* (accepted for publication)
- Stephoe, A, Pollard, T. M. and Wardle, J. (1995) Development of a measure of the motives underlying the selection of food: the food choice questionnaire *Appetite* 25 267-284
- Torjusen, H., Lieblein, G., Wandel, M., and Francis, C. A. (2001). "Food system orientation and quality perception among consumers and producers of organic food in Hedmark County, Norway." *Food Quality and Preference* 12 (3) 207-216

Figure 1 Results of 8 products and 15 terms.

