

**Title:**

**Identification of Sensory Codes by using Sensory Analysis and Time-Reaction Measurement of Product Associations**

With regard to the successful positioning of a new or modified product an important question raises: Which sensory characteristics evoke which association in the brains of target groups?

To gather relevant product associations it is a common approach to use allocation methods. However, current findings of neuroscientists give rise to doubts whether such explicit methods for the collection of product associations lead to the desired results. Consumers mainly perceive and decipher the coding of a product implicitly, unconsciously and uncontrolled within a few seconds.

Using a suitable protocol this study aims to reduce the degree of cognitive control of participants' decision-making processes and focuses on time-reaction measurement.

The project follows a five step approach:

Test Step	Task	Methodology
1 Qualitative Pre-Stage	Identification of all relevant product associations from a customer's point of view (creation of suitable test stimuli)	<ul style="list-style-type: none"><li>• Laddering</li><li>• Repertory Grid</li><li>• Natural Grouping</li></ul>
2 Descriptive Analysis	Determination of the test product's sensory characteristics (identification of sensory codes by an obj., descr. language)	<ul style="list-style-type: none"><li>• Descriptive Analysis</li><li>• Free Choice Profiling</li><li>• Flash Profiling</li></ul>
3 Affective Consumer Test	Determination of the consumer's sensory product assessment	<ul style="list-style-type: none"><li>• Preference Test</li><li>• Acceptance Test</li><li>• "Just About Right"-Questions</li></ul>
4 Implicit Measurement of Associations	Determination of the consumer's product associations triggered by the sensory codes	<ul style="list-style-type: none"><li>• Allocation Methods</li><li>• Semantic Priming</li><li>• IAT/EAST</li></ul>
5 Statistical linkage of Information	Establishing of a functional connection between sensory codes and the consumer's association.	<ul style="list-style-type: none"><li>• PLS-Regression</li><li>• MDS/Profit</li><li>• PCA</li></ul>

A qualitative pre-stage identified 62 relevant product associations. Additionally we decided for 12 picture stimuli, which were validated concerning different attention to our motive system beforehand.

Later on, special implicit approaches were used to capture product associations. In this test an allocation of verbal and nonverbal items based on a "Forced Choice"- task with limited response time ( $\leq 3,5$ sec) was carried out. Every participant had to decide whether the item (word or picture) fits to the presented chewy candy or not within 3,5 seconds. All products and allocated associations can be plotted by a correspondence analysis. Subsequently we determined particularly those combinations of product and its allocated items which led to a high level of association because of the measured reaction time: The faster the decision is made, the more the item fits/does not fit to the candy.

Step five represents the innovative emphasis of the project: For the first time the results of the reaction-time-based associations were linked with the descriptive data. The graphical presentation of both the association space and sensory descriptors points out to what extent differences between products are de facto perceptible and with which spontaneous associations these are evoked by consumers.