

IDENTIFYING FUTURE MARKET DEMANDS USING SENSORY EVALUATION

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A series of methods that use trained assessor panels and/or consumer panels can be used to identify future market demands. Some of these methods are:

- ✓ Focus group studies through which a qualitative evaluation of consumer necessities are obtained.
- ✓ Studies on how appropriate a food is for different contexts or uses.
- ✓ Concept development of a new food product using quantitative methods.
- ✓ Preference maps (PM).

PM allow relating information obtained from a trained sensory panel with information obtained from a consumer panel. We shall refer to these methods which are divided in three categories:

Internal preference maps. Through these we can obtain a map of the products/samples based on the sensory acceptability given by a consumer panel. Samples are placed on the map, those which are close together have similar acceptability. The direction of acceptability for each consumer is represented on the same map. One objective is to observe if a group of consumers cluster together in a region of the map. The map is relatively easy to obtain, the data matrix formed by M samples (rows) by N consumers (columns), is submitted to principal component analysis. The method on its own does not provide sensory information to interpret the acceptability dimensions.

Extended internal preference maps. Due to the limitation of understanding the acceptability dimensions of the internal PM, it is useful to project the information from a trained sensory panel on this map. This projection is obtained by calculating the correlation coefficient between each acceptability dimension and each sensory descriptor, and then plotting these coefficients on the map. This way the map contains the following information:

- a) Relative position of the samples in relation to their sensory acceptability.
- b) Acceptability direction of each consumer and their possible grouping in clusters according to their preferences.
- c) The correlation of the sensory attributes with the acceptability dimensions.

External preference mapping. This method refers to a series of models used to project acceptability data on a sensory map obtained from sensory descriptive analysis. The models are basically two: the vectorial model where the consumer responds to a 'the more the better' behavior, and the ideal point model where the consumer prefers an intermediate level of sensory properties. The information contained on the map is similar to extended PM.

A frequent problem with PM methods is that as the number of consumers increase, interpretation of results is more difficult. A way around this problem is to previously analyze the data using cluster analysis to form groups of consumers with similar preference patterns. These methods allow working with 3 to 10 groups instead of the 100 or more consumers who performed the acceptability tests.

The questions which PM can answer are:

- Where do I have to move my product?
- Where is the competition?
- Is there a niche in the market not covered by products presently on the market?
- What type of segmentation is there among consumers in relation to products?