Statistics for Sensory Analysis

Duration 3 days
(SEN1-3)

Pre-requisite

Only the most basic statistical knowledge is assumed.

Course Summary

We offer training in three one day modules, any one of these can be run on its own or combined with the other modules into a two or three day training course. Each module covers key statistical techniques used in the analysis of data collected by sensory panels. Emphasis is placed on the interpretation of the statistical tests and mathematical details are kept to a minimum. The training is suitable for sensory scientists, or for those involved in the interpretation of sensory data.

Software

As part of the training package we supply a free copy of SENPAQ©, our own software for analysing sensory profile data, for each delegate. The training also requires a general statistical software package. We can advise on appropriate software packages.

Flexibility

We can customise the module content to meet specific requirements.

Course Content

Module 1 **Analysis of Sensory Panel Data**
(one scale variable at a time)

- Fundamentals
  - Precision of a mean – standard error and confidence interval
  - Panel noise variation – interaction v panellist repeatability
  - Comparison of means – t test
  - Comparison of variability – F test
- Analysis of Variance
  - How it works
  - Interpretation
  - Comparison tests and LSD's
  - Assumptions – which of my sensory variables will not give valid test results?

- How to deal with these problem attributes
- Methods of assessing panel performance
  - Three key measures: repeatability, discrimination and consistency

Module 2 **Analysis of Sensory Panel Data (using many scale variables together)**

- Introduction to multivariate data
  - Multivariate Data displays
  - Correlation
- Principal Component Analysis (PCA)
  - How many underlying sensory dimensions are there in my profile?
  - Producing product maps using PCA
  - Interpreting the map
- Canonical Discriminant Analysis
  - Visualising product differences relative to panel variation
- Cluster Analysis
  - Grouping products using sensory similarities
- Generalised Procrustes Analysis
  - Overlaying data matrices to form a consensus map
  - Applications to panel performance and free choice profiling

Module 3 **Linking Sensory and Consumer Liking Data, Consumer Sensory Measures**

- Simple Regression Modelling
  - Predicting liking from key sensory variables, identifying key drivers
  - Principal Component Regression
- Partial Least Squares Regression
  - How it works, applications
- Sorting and Napping Tasks
  - Analysing data from free sorting tasks
  - Napping methods and analysis using Multiple Factor Analysis

For further information and pricing contact:
Qi Statistics Ltd at www.qistatistics.co.uk or telephone +44 (0)1189 345722