

## Consumer preference mapping of carrots

**Key words:** Random coefficient analysis.

### Description

In a consumer study 103 consumers scored their preference of 12 danish carrot types on a scale from 1 to 7. Moreover the consumers scored the degree of sweetness, bitterness and crispiness in the products. The carrots were harvested in autumn 1996 and tested in march 1997. A number of background information variables were recorded for each consumer:

Frequency: "How often do you eat carrots?"

1. Once a week or more
2. Once every 2 weeks
3. once every 3 weeks
4. At least once a month
5. Less than once a month

Gender:

1. male
2. female

Age:

1. -25 y
2. 26-40 y
3. 41-60
4. 61-

Homesize: (number of persons in the household)

1. 1 or 2 persons
2. 3 or more persons

Work: (7 different types of employment)

1. Unskilled worker (no education)
2. Skilled worker (with education)
3. Office worker
4. Housewife (or man)
5. independent businessman/self-employed
6. Student
7. Retired

Income: (of the household)

1. <150.000 DKK
2. 150.000-300.000 DKK
3. 300.000-500.000 DKK
4. >500.000 DKK

In addition to the consumer survey, the carrot products were evaluated by a trained panel of tasters, the sensory panel, with respect to a number of sensory (taste, odour and texture) properties. Since usually a high number of (correlated) properties(variables) are used, in this case 14, it is a common procedure to use a few, often 2, combined variables that contain as much of the information in the sensory variables as possible. This is achieved by extracting the first two principal components in a principal components analysis(PCA) on the product-by-property panel average data matrix. In this data set the values of the first two principal components are provided, see **the loadings plot** for the interpretation of these components.

Number of observations: 1236

Variable	Description
Consumer	Numbering identifying the consumers
Frequency	Valued 1-5 (see above)
Gender	Valued 1-2 (see above)
Age	Valued 1-4(see above)
Homesize	Valued 1-2 (see above)
Work	Valued 1-7 (see above)
Income	Valued 1-4 (see above)
Preference	preference score
Sweetness	Sweetness score
Bitter	Bitterness score
Crisp	Crispiness score
Sens1	First sensory principal component
Sens2	First sensory principal component
Product	Product identification

## Source

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## Analysis

Randomized block, Random coefficient analysis.