Multivariate Data Analysis
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Exercise Sheet 4: Discriminant Analysis

Computer Problems:

1. In this example, the remote-sensing data are used. In this data set, *crops*, the observations are grouped into five crops: clover, corn, cotton, soybeans, and sugar beets. Four measures called $x1$ through $x4$ make up the descriptive variables.

   (a) Perform a linear discriminant analysis with response variable *Crop*. Assume equal variances. Interpret the results.

   (b) Perform a quadratic discriminant analysis with response variable *Crop*. Assume non-equal variances. Interpret the results.

2. A large international air carrier has collected data on employees in three different job classifications; 1) customer service personnel, 2) mechanics and 3) dispatchers. The director of Human Resources wants to know if these three job classifications appeal to different personality types. Each employee is administered a battery of psychological test which include measures of interest in outdoor activity, sociability and conservativeness.

   (a) Perform a descriptive analysis.

   (b) Perform a correlation analysis for the explanatory variables.

   (c) Perform a linear discriminant analysis with response variable *JOB*. Assume equal variances. Interpret the results.

   (d) Perform a quadratic discriminant analysis with response variable *JOB*. Assume non-equal variances. Interpret the results.