Multivariate Analysis for the Behavioral Sciences, Second Edition (Chapman and Hall/CRC, 2019)

Exercises of Chapter 18: Grouped Multivariate Data

20 December 2018

Exercises

Exercise 18.4

Use the pottery data below, modifying the related R code given in the **Examples of Chapter 18**.

```
pottery <- read.csv("data/pottery.csv")
str(pottery)
```

```
## 'data.frame':    45 obs. of  10 variables:
##  $ kiln : int  1 1 1 1 1 1 1 1 1 1 ...
##  $ AL2O3: num  18.8 16.9 18.2 16.9 17.8 18.8 16.5 18 15.8 14.6 ...
##  $ FE2O3: num  9.52 7.33 7.64 7.29 7.24 7.45 7.05 7.42 7.15 6.87 ...
##  $ MGO  : num  2 1.65 1.82 1.56 1.83 2.06 1.81 2.06 1.62 1.67 ...
##  $ CAO  : num  0.79 0.84 0.77 0.76 0.92 0.87 1.73 1 0.71 0.76 ...
##  $ NA2O : num  0.4 0.4 0.4 0.4 0.43 0.25 0.33 0.28 0.38 0.33 ...
##  $ K2O  : num  3.2 3.05 3.07 3.05 3.12 3.26 3.2 3.37 3.25 3.06 ...
##  $ TIO2 : num  1.01 0.99 0.98 1 0.93 0.98 0.95 0.96 0.93 0.91 ...
##  $ MNO  : num  0.077 0.067 0.087 0.063 0.061 0.072 0.066 0.072 0.062 0.055 ...
##  $ BAO  : num  0.015 0.018 0.014 0.019 0.019 0.017 0.019 0.017 0.017 0.012 ...
```

```
head(pottery)
```

```
##   kiln AL2O3 FE2O3  MGO  CAO NA2O  K2O TIO2   MNO   BAO
## 1    1  18.8  9.52 2.00 0.79 0.40 3.20 1.01 0.077 0.015
## 2    1  16.9  7.33 1.65 0.84 0.40 3.05 0.99 0.067 0.018
## 3    1  18.2  7.64 1.82 0.77 0.40 3.07 0.98 0.087 0.014
## 4    1  16.9  7.29 1.56 0.76 0.40 3.05 1.00 0.063 0.019
## 5    1  17.8  7.24 1.83 0.92 0.43 3.12 0.93 0.061 0.019
## 6    1  18.8  7.45 2.06 0.87 0.25 3.26 0.98 0.072 0.017
```