

The data set (and description) can be downloaded here:

<http://stat.ethz.ch/Teaching/Datasets/banknoten.dat>

Description:

TITLE : banknoten
KEYWORDS (statist) : multivariate, discriminant analysis
APPLICATION AREA : everyday life, economy

SHORT DESCRIPTION :
Riedwyl's data on bank notes,
100 genuine and 100 counterfeit bank notes
Explanatory variables are:
- length of the bank note;
- height of the bank note, measured on the left;
- height of the bank note, measured on the right;
- distance of inner frame to the lower border;
- distance of inner frame to the upper border;
- length of the diagonal.

SPEC. CHARACT. : Some 'outliers'

DIM. (VAR./OBS.) : 7 / 200

/ LITERATURE : /

Flury and Riedwyl (1988)

NOTES : (This file was created in 1995)

Descriptive statistics:

Dataset= banknoten : n= 200 , d= 6

class1: n= 100

Covariance matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]
[1,]	0.1502	0.0580	0.0573	0.0571	0.0145	0.0055
[2,]	0.0580	0.1326	0.0859	0.0567	0.0491	-0.0431
[3,]	0.0573	0.0859	0.1263	0.0582	0.0306	-0.0238
[4,]	0.0571	0.0567	0.0582	0.4132	-0.2635	-0.0002
[5,]	0.0145	0.0491	0.0306	-0.2635	0.4212	-0.0753
[6,]	0.0055	-0.0431	-0.0238	-0.0002	-0.0753	0.1998

Correlation matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]
[1,]	1.0000	0.4111	0.4160	0.2293	0.0575	0.0316
[2,]	0.4111	1.0000	0.6639	0.2420	0.2076	-0.2646
[3,]	0.4160	0.6639	1.0000	0.2547	0.1329	-0.1497
[4,]	0.2293	0.2420	0.2547	1.0000	-0.6316	-0.0007
[5,]	0.0575	0.2076	0.1329	-0.6316	1.0000	-0.2596
[6,]	0.0316	-0.2646	-0.1497	-0.0007	-0.2596	1.0000

Median: 214.9668 129.9137 129.6902 8.2604 10.1898 141.5212

Mean: 214.969 129.943 129.72 8.305 10.168 141.517

MCD-estimated:

MDC-0.975-Mean: 214.9909 129.9261 129.6898 8.2227 10.2023 141.5591

MDC-0.750-Mean: 214.9977 129.9182 129.692 8.2284 10.2125 141.5489

MDC-0.500-Mean: 214.993 129.9163 129.686 8.2267 10.2 141.5593

class2: n= 100

Covariance matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]
[1,]	0.1240	0.0315	0.0240	-0.1006	0.0194	0.0116
[2,]	0.0315	0.0651	0.0468	-0.0240	-0.0119	-0.0051
[3,]	0.0240	0.0468	0.0889	-0.0186	0.0001	0.0342
[4,]	-0.1006	-0.0240	-0.0186	1.2813	-0.4902	0.2385
[5,]	0.0194	-0.0119	0.0001	-0.4902	0.4045	-0.0221
[6,]	0.0116	-0.0051	0.0342	0.2385	-0.0221	0.3112

Correlation matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]
[1,]	1.0000	0.3509	0.2285	-0.2524	0.0868	0.0589
[2,]	0.3509	1.0000	0.6149	-0.0833	-0.0735	-0.0355
[3,]	0.2285	0.6149	1.0000	-0.0550	0.0007	0.2055
[4,]	-0.2524	-0.0833	-0.0550	1.0000	-0.6809	0.3777
[5,]	0.0868	-0.0735	0.0007	-0.6809	1.0000	-0.0622
[6,]	0.0589	-0.0355	0.2055	0.3777	-0.0622	1.0000

Median: 214.7982 130.278 130.1784 10.6688 11.1385 139.5366

Mean: 214.823 130.3 130.193 10.53 11.133 139.45

MCD-estimated:

MDC-0.975-Mean: 214.7679 130.2556 130.1667 10.8704 11.1074 139.6099

MDC-0.750-Mean: 214.7684 130.262 130.1785 10.9038 11.1013 139.6063

MDC-0.500-Mean: 214.7663 130.255 130.1675 10.8975 11.1 139.6025

Measures:

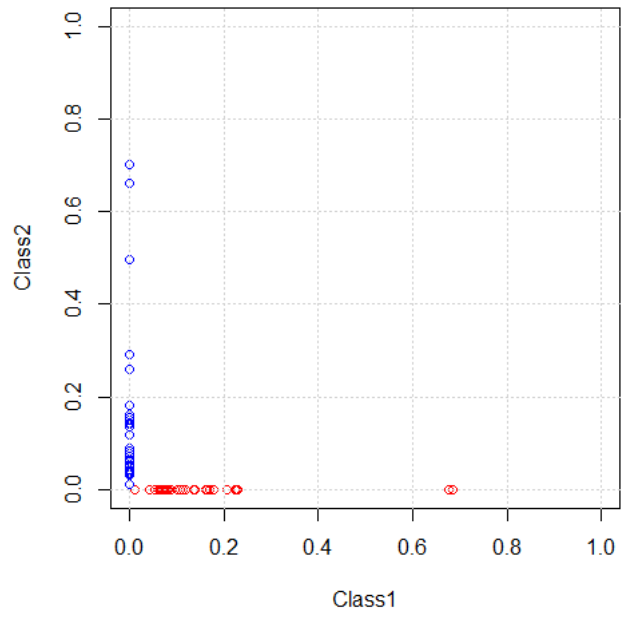
Mah.Dist: 6.9462

Mah.Dist-MCD-0.975: 7.88

Mah.Dist-MCD-0.750: 7.9346

Mah.Dist-MCD-0.500: 7.5434

DD-Plot (zonoid): banknoten



DD-Plot (random Tukey): banknoten

