

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

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

**Description:**

TITLE : gemsen  
KEYWORDS (statist) : descriptive statistics, comparison of groups, correlation  
APPLICATION AREA : ecology  
SHORT DESCRIPTION : Study on investigation of the constitution of chamois.  
Explanatory variables are:  
- year been shot;  
- male/female;  
- age of the shot animal;  
- age group;  
- weight of the shot animal, in kg;  
- horns' length, in mm;  
- area code (0 = area of study, 1 = reference area).

DIM. (VAR./OBS.) : 7 / 1353

/ LITERATURE : /  
It was a part of a term paper by Carola Tschanen in the Department Xa Biology (original source - Berner hunting inspection).

**Descriptive statistics:**

Dataset= gemsen\_MvsF : n= 1349 , d= 6

Class1: n= 796

**Covariance matrix:**

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]
[1,]	1.5842	0.0085	0.0092	-0.0029	-0.8373	-0.0779
[2,]	0.0085	8.6215	2.3027	13.8563	81.7292	-0.1494
[3,]	0.0092	2.3027	0.6948	4.1346	25.4369	-0.0485
[4,]	-0.0029	13.8563	4.1346	37.5609	208.3378	0.0236
[5,]	-0.8373	81.7292	25.4369	208.3378	1510.0854	0.9461
[6,]	-0.0779	-0.1494	-0.0485	0.0236	0.9461	0.2244

**Correlation matrix:**

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]
[1,]	1.0000	0.0023	0.0087	-0.0004	-0.0171	-0.1306
[2,]	0.0023	1.0000	0.9408	0.7700	0.7163	-0.1074
[3,]	0.0087	0.9408	1.0000	0.8094	0.7853	-0.1228
[4,]	-0.0004	0.7700	0.8094	1.0000	0.8748	0.0081
[5,]	-0.0171	0.7163	0.7853	0.8748	1.0000	0.0514
[6,]	-0.1306	-0.1074	-0.1228	0.0081	0.0514	1.0000

Median: 1993.771 5.2394 2.413 25.3158 217.9232 0.621

Mean: 1993.804 4.3379 2.098 22.7986 203.8932 0.6608

**MCD-estimated:**

MDC-0.975-Mean:	1993.677	3.5021	1.8883	22.3388	202.2511	1
MDC-0.750-Mean:	1993.676	3.756	1.9461	22.59	203.862	1
MDC-0.500-Mean:	1993.677	3.5021	1.8883	22.3388	202.2511	1

Class2: n= 553

Covariance matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]
[1,]	1.9854	0.6351	0.1456	0.2728	4.2444	-0.0189
[2,]	0.6351	18.1412	4.2823	8.2760	132.5639	0.1861
[3,]	0.1456	4.2823	1.1140	2.3945	35.6860	0.0298
[4,]	0.2728	8.2760	2.3945	12.0154	110.2595	0.0839
[5,]	4.2444	132.5639	35.6860	110.2595	1617.4958	1.5457
[6,]	-0.0189	0.1861	0.0298	0.0839	1.5457	0.2068

Correlation matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]
[1,]	1.0000	0.1058	0.0979	0.0558	0.0749	-0.0295
[2,]	0.1058	1.0000	0.9526	0.5606	0.7739	0.0961
[3,]	0.0979	0.9526	1.0000	0.6545	0.8407	0.0621
[4,]	0.0558	0.5606	0.6545	1.0000	0.7909	0.0532
[5,]	0.0749	0.7739	0.8407	0.7909	1.0000	0.0845
[6,]	-0.0295	0.0961	0.0621	0.0532	0.0845	1.0000

Median: 1993.92 5.2809 2.3983 18.5248 182.01 0.6863

Mean: 1993.904 5.0108 2.1953 17.4429 170.7902 0.7089

MCD-estimated:

MDC-0.975-Mean: 1993.811 4.0266 1.9706 17.3814 167.2655 1

MDC-0.750-Mean: 1993.811 4.0266 1.9706 17.3814 167.2655 1

MDC-0.500-Mean: 1993.81 3.9822 1.9615 17.3498 166.8576 1

Measures:

Mah.Dist: 1.7852

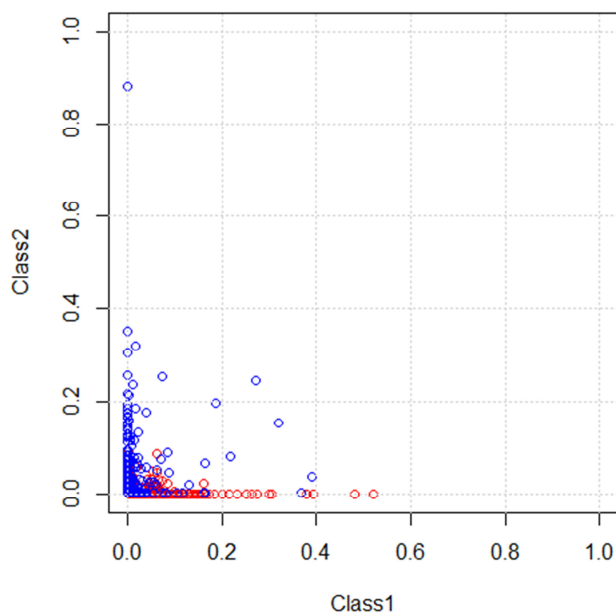
Mah.Dist-MCD-0.975: 1.5195

Mah.Dist-MCD-0.750: 1.5152

Mah.Dist-MCD-0.500: 1.5075

All the MCD estimates have been obtained after a slight perturbation of the data set

DD-Plot (zonoid): gemsen\_MvsF



DD-Plot (random Tukey): gemsen\_MvsF

