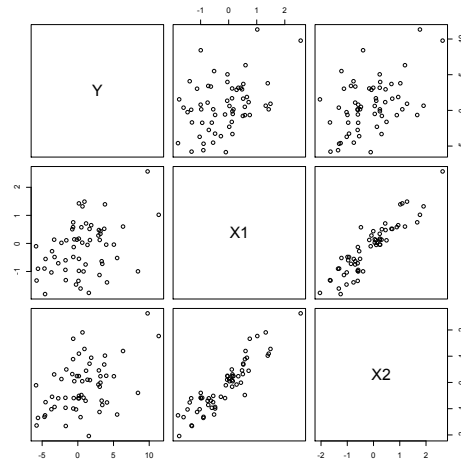


Multicol.linearitat

variables Y,X1,X2



Regressió Y vs X1

```
> summary(lm(Y ~ X1))

Call:
lm(formula = Y ~ X1)

Residuals:
    Min       1Q   Median       3Q      Max
-6.624 -2.514 -0.220  1.770  9.042

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.9266     0.4362   2.124  0.03793 *
X1           1.5516     0.4802   3.231  0.00203 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.328 on 58 degrees of freedom
Multiple R-squared:  0.1525, Adjusted R-squared:  0.1379
F-statistic: 10.44 on 1 and 58 DF,  p-value: 0.002035

>
```

Regressió Y vs X2

```
> summary(lm(Y ~ X2))

Call:
lm(formula = Y ~ X2)

Residuals:
    Min       1Q   Median       3Q      Max
-6.5837 -2.6262  0.1395  1.9101  8.1945

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.9148     0.4180   2.188 0.032680 *
X2           1.7214     0.4338   3.968 0.000202 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.206 on 58 degrees of freedom
Multiple R-squared:  0.2135, Adjusted R-squared:  0.2
F-statistic: 15.75 on 1 and 58 DF,  p-value: 0.0002019
```

Regressió Y vs X1, X2

```
> summary(lm(Y ~ X1+ X2))

Call:
lm(formula = Y ~ X1 + X2)

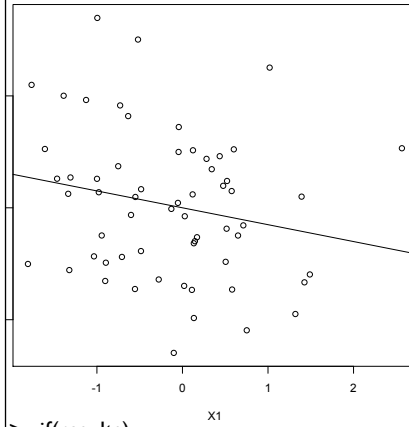
Residuals:
    Min       1Q   Median       3Q      Max
-6.5591 -2.4067 -0.0952  2.0863  7.7323

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.8834     0.4227   2.090  0.0411 *
X1          -0.7541     1.1417  -0.661  0.5116
X2           2.3673     1.0706   2.211  0.0311 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

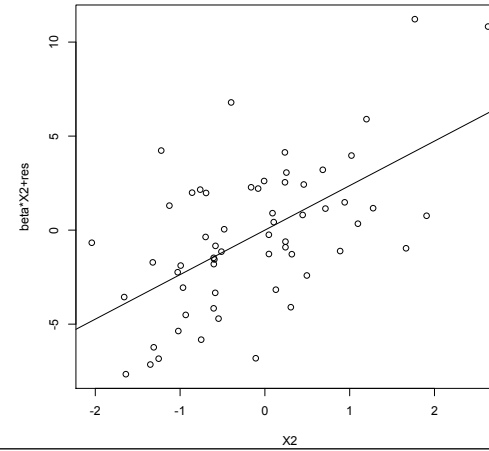
Residual standard error: 3.222 on 57 degrees of freedom
Multiple R-squared:  0.2195, Adjusted R-squared:  0.1921
F-statistic: 8.014 on 2 and 57 DF,  p-value: 0.0008568
```

Grafics de regressió parcial:

```
results=lm(Y ~ X1+ X2)
library(faraway)
prplot(results,1)
prplot(results,2)
```



```
> vif(results)
X1 X2
6.031276 6.031276
```



població

```
n=60
X1 = rnorm(n)
X2 = X1 + 0.4*rnorm(n)
Y = 1 - 2*X1 + 3*X2+ 3.3*rnorm(n)

summary(lm(Y ~ X1 ))
summary(lm(Y ~ X2 ))
summary(lm(Y ~ X1 + X2 ))

write.table(da, file = "/AlbertNou/COURSES/Metodes05_07_10/multicol.txt", col.name= T, row.name=F, na="9999", sep = " ")
library(foreign)
write.foreign(da, "/AlbertNou/COURSES/Metodes05_07_10/multicol.dat","/AlbertNou/COURSES/Metodes05_07_10/
multicol.sps",package="SPSS")

cov(rdat, use="pairwise.complete.obs")

res=lm(Y ~ X1 + X2 )

summary(res)
plot(res)
e=residuals(res)
res$coef

influence.measures(res)

coef, effects, residuals, fitted, vcov.

summary.lm
influence.measures,
hat for the hat matrix diagonals,
dfbetas, dffits, covratio, cooks.distance, lm.

### partial regression plots:

library(faraway)

prplot(res,2)
prplot(res,1)
```