

Clase-6.R

Usuario

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```
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#Clase 6

# Covarianza -----

library(repmis)

## Registered S3 method overwritten by 'R.oo':
##   method      from
##   throw.default R.methodsS3

edad <- source_data("https://www.dropbox.com/s/nxoijhgmuto0s/datos_control_Rascon.csv?dl=1")

## Downloading data from: https://www.dropbox.com/s/nxoijhgmuto0s/datos_control_Rascon.csv?dl=1
## SHA-1 hash of the downloaded data file is:
## 5db2352e6fda9922f4feda0950294d01ac4f7861

head(edad)

##   arbol  DAP EDAD      SP
## 1     1 27.4   59 arizonica
## 2     2 19.5   29 arizonica
## 3     3 20.0   24 arizonica
## 4     4 22.0   40 arizonica
## 5     5 34.0   50 arizonica
## 6     6 33.1   44 arizonica

str(edad)

## 'data.frame':   60 obs. of  4 variables:
##  $ arbol: int   1 2 3 4 5 6 7 8 9 10 ...
##  $ DAP  : num  27.4 19.5 20 22 34 33.1 32 10 14 11 ...
##  $ EDAD : int   59 29 24 40 50 44 44 17 15 16 ...
##  $ SP   : chr  "arizonica" "arizonica" "arizonica" "arizonica" ...

#Identificar columna SP como factor
edad$SP<- factor(edad$SP)
str(edad)

## 'data.frame':   60 obs. of  4 variables:
##  $ arbol: int   1 2 3 4 5 6 7 8 9 10 ...
##  $ DAP  : num  27.4 19.5 20 22 34 33.1 32 10 14 11 ...
##  $ EDAD : int   59 29 24 40 50 44 44 17 15 16 ...
##  $ SP   : Factor w/ 2 levels "arizonica","durangensis": 1 1 1 1 1 1 1 1 1 1 ...

# separar por factores -----

ariz<- subset(edad, SP=="arizonica")
```

```
ariz.lm<- lm(ariz$EDAD~ariz$DAP)
summary(ariz.lm)
```

```
##
## Call:
## lm(formula = ariz$EDAD ~ ariz$DAP)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -12.3601  -4.5512   0.1622   4.3527  17.6786
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   5.3330     3.3199   1.606   0.119
## ariz$DAP       1.3134     0.1596   8.229 5.89e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 6.752 on 28 degrees of freedom
## Multiple R-squared:  0.7075, Adjusted R-squared:  0.697
## F-statistic: 67.72 on 1 and 28 DF,  p-value: 5.888e-09
```

```
dura<- subset(edad, SP="durangensis")
dura.lm<- lm(dura$EDAD~dura$DAP)
summary(dura.lm)
```

```
##
## Call:
## lm(formula = dura$EDAD ~ dura$DAP)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -28.005  -12.539   0.270   7.457  49.630
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -8.4803     6.0802  -1.395   0.168
## dura$DAP       2.4316     0.2434   9.992 3.2e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 17.28 on 58 degrees of freedom
## Multiple R-squared:  0.6325, Adjusted R-squared:  0.6262
## F-statistic: 99.83 on 1 and 58 DF,  p-value: 3.201e-14
```

```
# Regresion dos factores -----
```

```
cov.edad<- lm(edad$EDAD~edad$DAP + edad$SP)
summary(cov.edad)
```

```
##
## Call:
## lm(formula = edad$EDAD ~ edad$DAP + edad$SP)
##
## Residuals:
```

```
##      Min      1Q  Median      3Q      Max
## -30.844  -8.515  -1.731   7.473  38.741
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -7.6573     5.2903  -1.447   0.153
## edad$DAP          1.9861     0.2342   8.480 1.10e-11 ***
## edad$SPdurangensis 19.0629     4.2942   4.439 4.19e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 15.03 on 57 degrees of freedom
## Multiple R-squared:  0.7269, Adjusted R-squared:  0.7174
## F-statistic: 75.87 on 2 and 57 DF,  p-value: < 2.2e-16
```

```
plot(edad$DAP[edad$SP == "arizonica"], edad$EDAD[edad$SP == "arizonica"], col= "orange", pch="A", xlab="edad$DAP", ylab="edad$EDAD", xlim=c(0,50), ylim=c(0,100))
abline(cov.edad$coefficients[1],cov.edad$coefficients[2], col="orange")
text(30,20, "Ya(-7.65 + 1.98*x)")
points(edad$DAP[edad$SP=="durangensis"], edad$EDAD[edad$SP=="durangensis"], col= "green", pch="D", xlim=c(0,50), ylim=c(0,100))
abline(cov.edad$coefficients[1] + cov.edad$coefficients[3], cov.edad$coefficients[2], col="green", lty=2)
text(19,100, "Yd(11.41 + 1.98*x)")
```

