Clase-6.R

Usuario

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```r
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#Clase 6

#Analisis de covarianza
library(repmis)
```

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

```r
edad <- source_data("https://www.dropbox.com/s/nxoijhgmutuho0s/datos_control_Rascon.csv?dl=1")
```

```
## Downloading data from: https://www.dropbox.com/s/nxoijhgmutuho0s/datos_control_Rascon.csv?dl=1
```

```
## SHA-1 hash of the downloaded data file is:
## 5db2352e6fda9922f4feda0950294d01ac4f7861
```

```r
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
```

```r
#De que tipo de variables estan compuestos nuestros datos
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" ...
```

```r
#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 ...
```

```r
# Separar factor ----------------------------------------------------------

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

```r
#Regresión de 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
```

```r
plot(edad$DAP[edad$SP == "arizonica"], edad$EDAD[edad$SP == "arizonica"],
     col = "red", pch = "A", xlim = c(0,50), ylim = c(0,130))

#Agregar la linea de regresión
abline(cov.edad$coefficients[1], cov.edad$coefficients[2], col= "red")
text(30, 20, "Ya = -7.65 + 1.98 * x")

points(edad$DAP[edad$SP == "durangensis"], edad$EDAD[edad$SP == "durangensis"],
     col = "blue", pch = "D")

abline(cov.edad$coefficients[1] + cov.edad$coefficients[3],
       cov.edad$coefficients[2], col= "blue", lty = "dashed")
text(19, 100, "Yd = 11.41 + 1.98 * x ")
```

Yd = 11.41 + 1.98 * x

Ya = −7.65 + 1.98 * x

edad$DAP[edad$SP == "arizonica"]

edad$EDAD[edad$SP == "arizonica"]