Laboratorio_6.R

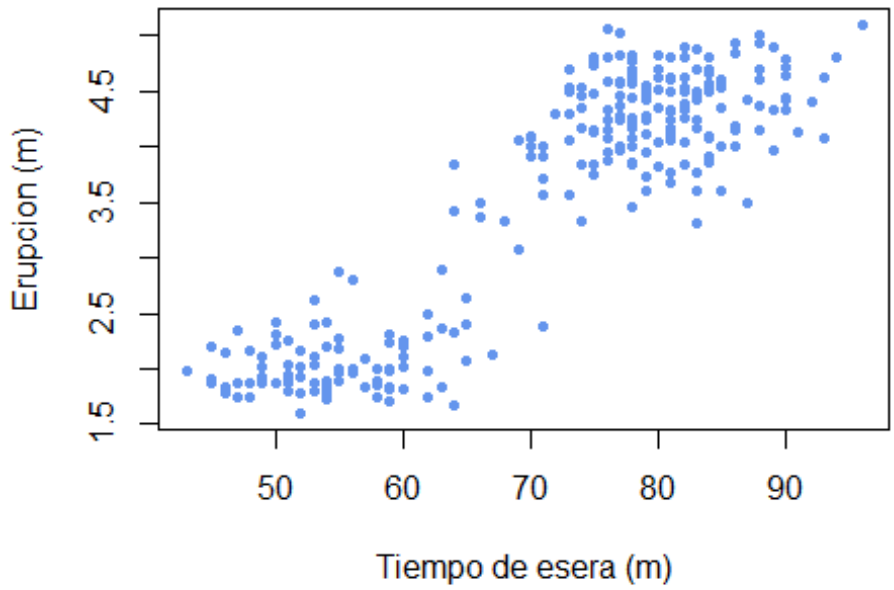
Usuario

2025-11-13

```r
# ==================================
# Correlacon Pearson
# Datos del geyser Old Faithful
# JEGR
# 24/09/2025
# ==================================

data("faithful") # Eruptions (cantidad de minutos que dura la erupcion)
# Causalidad, causa (tiempo de espera) - efecto (tiempo que dura la
erupcion)

plot(faithful$waiting, faithful$eruptions,
     xlab = "Tiempo de esera (m)",
     ylab = "Erupcion (m)",
     col = "cornflowerblue",
     pch =20)                  # Correlacion positiva
```




```r
# Correlacionar las dos variables
# h0 = 0
# h1!= 0
```

```r
# ======================================
# comprobar que los datos sean o no normales antes de hacer las pruebas
de corr
# ======================================

# Prueba de shapiro para normalidad
shapiro.test(faithful$eruptions) # 9.036e-16<0.05, datos no normales
```

```
##
##  Shapiro-Wilk normality test
##
## data:  faithful$eruptions
## W = 0.84592, p-value = 9.036e-16
```

```r
shapiro.test(faithful$waiting)   # 1.015e-10<0.05, datos no normales
```

```
##
##  Shapiro-Wilk normality test
##
## data:  faithful$waiting
## W = 0.92215, p-value = 1.015e-10
```

```r
# Los datos no son normales

# ======================================
# Pearson solo se utiliza cuando hay datos normales
# ======================================

cor.test(faithful$waiting, faithful$eruptions,
         method = "spearman") # Correlacion alta (0.7779721 )
```

```
## Warning in cor.test.default(faithful$waiting, faithful$eruptions,
method =
## "spearman"): Cannot compute exact p-value with ties
```

```
##
##  Spearman's rank correlation rho
##
## data:  faithful$waiting and faithful$eruptions
## S = 744659, p-value < 2.2e-16
## alternative hypothesis: true rho is not equal to 0
## sample estimates:
##       rho
## 0.7779721
```

```r
# valor de p para comprobar, r para la correlacion si rechazar o no
hipotesis nula
```