examen\_f.R

Usuario

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#LUZ ELENA RODRÍGUEZ PEQUEÑO  
#2070472  
#29/11/2023  
#Examen final  
  
# importar ----------------------------------------------------------------  
  
setwd("C:/Repositorio\_LR/Met\_ES/codigos")  
madera <- read.csv("madera.csv", header = TRUE)   
head(madera)

## Encino Pino  
## 1 16.6 12.6  
## 2 16.8 14.4  
## 3 17.2 12.6  
## 4 17.6 12.0  
## 5 17.2 13.2  
## 6 18.6 13.2

# PARTE 1 -----------------------------------------------------------------  
  
  
  
# descriptivas ------------------------------------------------------------  
  
mean(madera$Encino) #17.46

## [1] 17.46

median(madera$Encino) #17.3

## [1] 17.3

range(madera$Encino)

## [1] 16.2 19.0

mean(madera$Pino) #12.68

## [1] 12.68

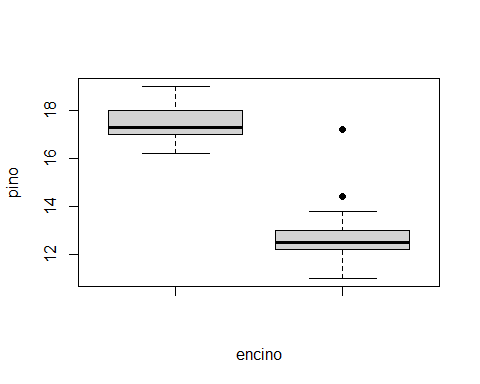
median(madera$Pino) #12.5

## [1] 12.5

range(madera$Encino)

## [1] 16.2 19.0

# grafica -----------------------------------------------------------------  
  
boxplot(madera$Encino, madera$Pino , xlab = "encino",   
 ylab = "pino", pch = 19)



# PARTE 2 -----------------------------------------------------------------  
  
  
# hipotesis ---------------------------------------------------------------  
#17.3 vs 12.5  
#la madera de la especie de encino pesa mas que la de pino segun los datos proporcionados   
  
  
# procedimiento -----------------------------------------------------------  
t.test(madera$Encino, mu = 17)

##   
## One Sample t-test  
##   
## data: madera$Encino  
## t = 3.3907, df = 29, p-value = 0.002029  
## alternative hypothesis: true mean is not equal to 17  
## 95 percent confidence interval:  
## 17.18254 17.73746  
## sample estimates:  
## mean of x   
## 17.46

#t = 3.3907, df = 29, p-value = 0.002029  
t.test(madera$Encino, mu = 16.5)

##   
## One Sample t-test  
##   
## data: madera$Encino  
## t = 7.0763, df = 29, p-value = 8.743e-08  
## alternative hypothesis: true mean is not equal to 16.5  
## 95 percent confidence interval:  
## 17.18254 17.73746  
## sample estimates:  
## mean of x   
## 17.46

#t = 7.0763, df = 29, p-value = 8.743e-08  
t.test(madera$Encino, mu = 16.6)

##   
## One Sample t-test  
##   
## data: madera$Encino  
## t = 6.3392, df = 29, p-value = 6.308e-07  
## alternative hypothesis: true mean is not equal to 16.6  
## 95 percent confidence interval:  
## 17.18254 17.73746  
## sample estimates:  
## mean of x   
## 17.46

#t = 6.3392, df = 29, p-value = 6.308e-07  
t.test(madera$Encino, mu = 8.5)

##   
## One Sample t-test  
##   
## data: madera$Encino  
## t = 66.046, df = 29, p-value < 2.2e-16  
## alternative hypothesis: true mean is not equal to 8.5  
## 95 percent confidence interval:  
## 17.18254 17.73746  
## sample estimates:  
## mean of x   
## 17.46

#t = 66.046, df = 29, p-value < 2.2e-16  
  
t.test(madera$Pino, mu = 13)

##   
## One Sample t-test  
##   
## data: madera$Pino  
## t = -1.5971, df = 29, p-value = 0.1211  
## alternative hypothesis: true mean is not equal to 13  
## 95 percent confidence interval:  
## 12.2702 13.0898  
## sample estimates:  
## mean of x   
## 12.68

#t = -1.5971, df = 29, p-value = 0.1211  
t.test(madera$Pino, mu = 13.5)

##   
## One Sample t-test  
##   
## data: madera$Pino  
## t = -4.0925, df = 29, p-value = 0.000311  
## alternative hypothesis: true mean is not equal to 13.5  
## 95 percent confidence interval:  
## 12.2702 13.0898  
## sample estimates:  
## mean of x   
## 12.68

#t = -4.0925, df = 29, p-value = 0.000311  
t.test(madera$Pino, mu = 13.6)

##   
## One Sample t-test  
##   
## data: madera$Pino  
## t = -4.5916, df = 29, p-value = 7.882e-05  
## alternative hypothesis: true mean is not equal to 13.6  
## 95 percent confidence interval:  
## 12.2702 13.0898  
## sample estimates:  
## mean of x   
## 12.68

#t = -4.5916, df = 29, p-value = 7.882e-05  
t.test(madera$Pino, mu = 6.5)

##   
## One Sample t-test  
##   
## data: madera$Pino  
## t = 30.843, df = 29, p-value < 2.2e-16  
## alternative hypothesis: true mean is not equal to 6.5  
## 95 percent confidence interval:  
## 12.2702 13.0898  
## sample estimates:  
## mean of x   
## 12.68

#t = 30.843, df = 29, p-value < 2.2e-16  
  
  
# recapibilidad -----------------------------------------------------------  
  
#Guardar la prueba t en un objeto llamado "prueba"  
prueba <- t.test(madera$Encino, mu =17)  
  
#Conocer el p-value  
prueba$p.value

## [1] 0.002028846

#0.002028846  
  
# Conocer los grados de libertad   
prueba$parameter

## df   
## 29

#df 29  
  
# Conocer intervalos de confianza   
prueba$conf.int

## [1] 17.18254 17.73746  
## attr(,"conf.level")  
## [1] 0.95

#17.18254 17.73746 #0.95  
  
  
# PARTE 3 -----------------------------------------------------------------  
  
# importar ----------------------------------------------------------------  
  
setwd("C:/Repositorio\_LR/Met\_ES/codigos")  
emiciones <- read.csv("emiciones.csv", header = TRUE)   
head(emiciones)

## azufre  
## 1 15.8  
## 2 22.7  
## 3 26.8  
## 4 19.1  
## 5 18.5  
## 6 14.4

mean(emiciones$azufre) #18.7075

## [1] 18.7075

median(emiciones$azufre)#18.8

## [1] 18.8

t.test(emiciones$azufre, mu = 19)

##   
## One Sample t-test  
##   
## data: emiciones$azufre  
## t = -0.32359, df = 39, p-value = 0.748  
## alternative hypothesis: true mean is not equal to 19  
## 95 percent confidence interval:  
## 16.87912 20.53588  
## sample estimates:  
## mean of x   
## 18.7075

#t = -0.32359, df = 39, p-value = 0.748  
  
#valor de p----------------------------------------------------------------  
#p-value = 0.748  
  
# Resultado ---------------------------------------------------------------  
  
#el valor de las emiciones de óxido de azufre registradas si son significativamente mayores a los valores registrados por la empresa   
#valor de la empresa 17.5 T/año  
#valor calculado 18.70 T/año