01-DatosOrdinales

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Datos Ordinales

```
crabs = read.table("../../../data/datacrab.txt", header = T)
# Omitir la primera columna que es un index
crabs = crabs[,-1]
str(crabs)
```

```
## 'data.frame':    173 obs. of  5 variables:
##  $ color : int  3 4 2 4 4 3 2 4 3 4 ...
##  $ spine : int  3 3 1 3 3 3 1 2 1 3 ...
##  $ width : num  28.3 22.5 26 24.8 26 23.8 26.5 24.7 23.7 25.6 ...
##  $ satell: int  8 0 9 0 4 0 0 0 0 0 ...
##  $ weight: int  3050 1550 2300 2100 2600 2100 2350 1900 1950 2150 ...
```

```
# Anchura de los cangrejos
table(crabs$width)
```

```
##
##   21   22 22.5 22.9   23 23.1 23.2 23.4 23.5 23.7 23.8 23.9   24 24.1 24.2 24.3
##    1    1    3    3    2    3    1    1    1    3    3    1    2    1    2    2
## 24.5 24.7 24.8 24.9   25 25.1 25.2 25.3 25.4 25.5 25.6 25.7 25.8 25.9   26 26.1
##    7    5    1    3    6    2    2    1    3    3    2    6    7    1    6    2
## 26.2 26.3 26.5 26.7 26.8   27 27.1 27.2 27.3 27.4 27.5 27.6 27.7 27.8 27.9   28
##    8    1    6    3    3    5    2    2    1    3    6    1    2    2    2    3
## 28.2 28.3 28.4 28.5 28.7 28.9   29 29.3 29.5 29.7 29.8   30 30.2 30.3 30.5 31.7
##    4    3    2    4    2    1    6    2    1    1    1    3    1    1    1    1
## 31.9 33.5
##    1    1
```

```
# Dividimos la anchura de los cangrejos en niveles
intervalos = cut(crabs$width, breaks = c(21,25,29,33,Inf), right = FALSE, labels = c("21-25", "25-29",

crabs$width.rank = ordered(intervalos)
str(crabs)
```

```
## 'data.frame':    173 obs. of  6 variables:
##  $ color     : int  3 4 2 4 4 3 2 4 3 4 ...
##  $ spine     : int  3 3 1 3 3 3 1 2 1 3 ...
```

```
##  $ width     : num  28.3 22.5 26 24.8 26 23.8 26.5 24.7 23.7 25.6 ...
##  $ satell    : int  8 0 9 0 4 0 0 0 0 0 ...
##  $ weight    : int  3050 1550 2300 2100 2600 2100 2350 1900 1950 2150 ...
##  $ width.rank: Ord.factor w/ 4 levels "21-25"<"25-29"<..: 2 1 2 1 2 1 2 1 1 2 ...
```

```
tabla = table(crabs[,c(1,6)])
tabla
```

```
##      width.rank
## color 21-25 25-29 29-33 33-...
##     2     1     9     2      0
##     3    19    62    13      1
##     4    17    24     3      0
##     5     9    12     1      0
```

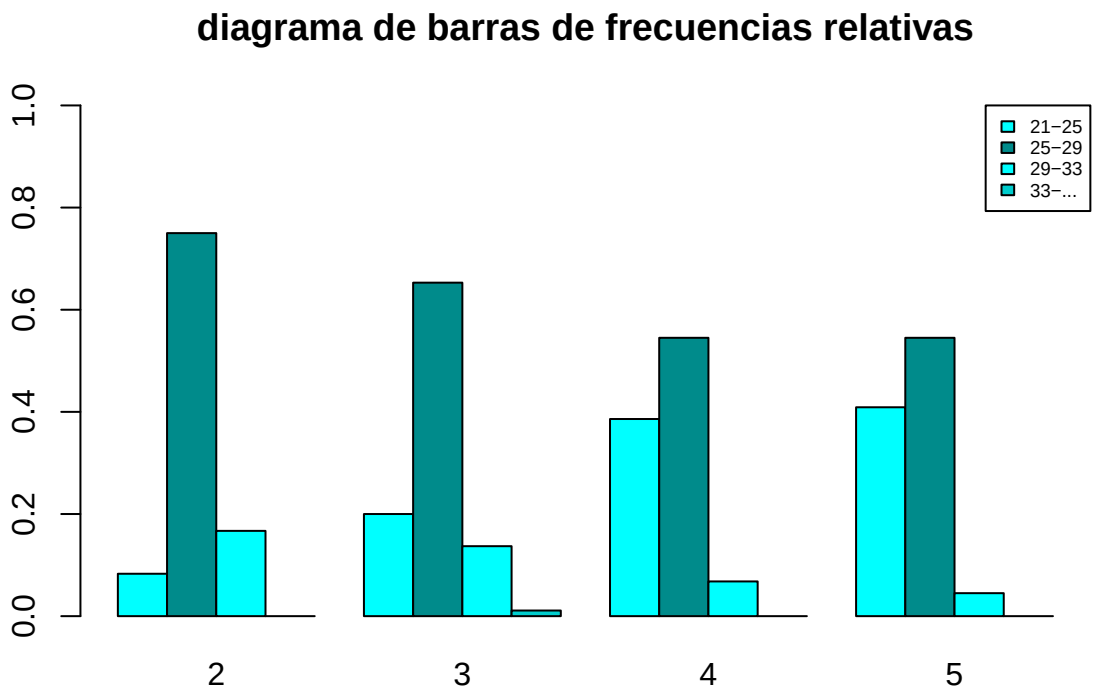
```
# Frecuencia relativa
Fr.rel = round(prop.table(tabla, margin = 1),3)
Fr.rel
```

```
##      width.rank
## color 21-25 25-29 29-33 33-...
##     2 0.083 0.750 0.167  0.000
##     3 0.200 0.653 0.137  0.011
##     4 0.386 0.545 0.068  0.000
##     5 0.409 0.545 0.045  0.000
```

```
# Frecuencia relativa acumulada
Fr.rel.acu = round(apply(prop.table(tabla, margin = 1), MARGIN = 1, FUN = cumsum),3)
t(Fr.rel.acu)
```

```
##      width.rank
## color 21-25 25-29 29-33 33-...
##     2 0.083 0.833 1.000      1
##     3 0.200 0.853 0.989      1
##     4 0.386 0.932 1.000      1
##     5 0.409 0.955 1.000      1
```

```
azul = c("cyan", "cyan4", "cyan1", "cyan3")
# Diagrama de frecuencias relativas
barplot(t(Fr.rel), beside = T, legend = T, ylim = c(0,1), col = azul,
        main = "diagrama de barras de frecuencias relativas",
        args.legend = list(x = "topright", cex=0.55))
```




```
# Diagrama de frecuencias relativas acumuladas
barplot(Fr.rel.acu, beside = T, legend = T, ylim = c(0,1), col = azul,
        main = "diagrama de barras de frecuencias relativas",
        args.legend = list(x = "topleft", cex=0.55))
```

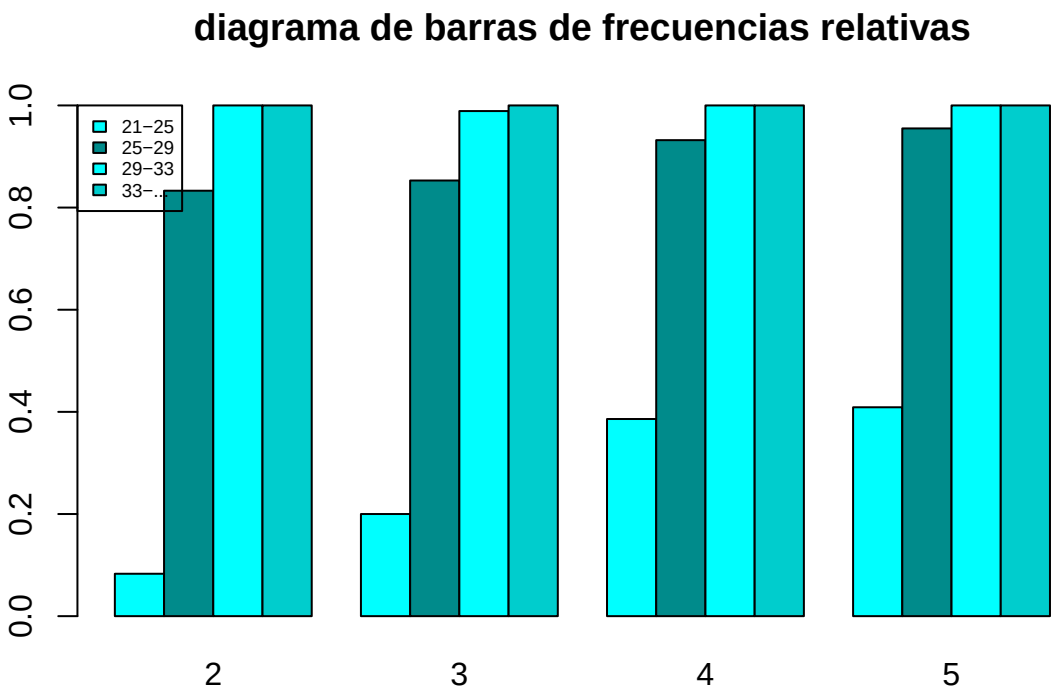


diagrama de barras de frecuencias relativas
21−25
25−29
29−33
33−..
0.0
0.2
0.4
0.6
0.8
1.0
2
3
4
5