

Tablas de Contingencia

Curso de Estadística Descriptiva

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Tablas de contingencia

```
datos = factor(c("H", "M", "M", "M", "H", "H", "M", "M"))  
table(datos)
```

```
## datos  
## H M  
## 3 5
```

```
table(datos)[ "M" ]
```

```
## M  
## 5
```

```
sum(table(datos))
```

```
## [1] 8
```

Frecuencias relativas

$$f_i = \frac{n_i}{n}$$

```
prop.table(table(datos))
```

```
## datos  
##      H      M  
## 0.375 0.625
```

```
100*prop.table(table(datos))
```

```
## datos  
##      H      M  
## 37.5 62.5
```

```
table(datos)/length(datos)
```

```
## datos
##      H      M
## 0.375 0.625
```

```
names(which(table(datos)==3))
```

```
## [1] "H"
```

```
moda <- function(d){
  names(which(table(d)==max(table(d))))
}

m_t = moda(datos)
```

La moda del data frame es: M.

Paquete gmodels

```
library(gmodels)
sex = factor(c("H", "M", "M", "M", "H", "H", "M", "M"))
ans = factor(c("S", "N", "S", "S", "S", "N", "N", "S"))
CrossTable(sex, ans, prop.chisq = FALSE)
```

```
##
##
##      Cell Contents
## |-----|
## |                      N |
## |      N / Row Total |
## |      N / Col Total |
## |      N / Table Total |
## |-----|
##
##
## Total Observations in Table:  8
##
##
##           | ans
##      sex |      N |      S | Row Total |
## -----|-----|-----|-----|
##           H |      1 |      2 |          3 |
##           | 0.333 | 0.667 | 0.375 |
##           | 0.333 | 0.400 |          |
##           | 0.125 | 0.250 |          |
## -----|-----|-----|-----|
##           M |      2 |      3 |          5 |
```

```
##          |      0.400 |      0.600 |      0.625 |
##          |      0.667 |      0.600 |              |
##          |      0.250 |      0.375 |              |
## -----|-----|-----|-----|
## Column Total |          3 |          5 |          8 |
##          |      0.375 |      0.625 |              |
## -----|-----|-----|-----|
##
##
```

Sumas por filas y columnas

```
tt <- table(sex, ans)
tt# Frec. absolutas
```

```
##      ans
## sex N S
##  H 1 2
##  M 2 3
```

```
prop.table(tt)#Frec. Rel. Global
```

```
##      ans
## sex      N      S
##  H 0.125 0.250
##  M 0.250 0.375
```

```
prop.table(tt, margin = 1)#Frec. Rel. Por sexo
```

```
##      ans
## sex      N      S
##  H 0.3333333 0.6666667
##  M 0.4000000 0.6000000
```

```
prop.table(tt, margin = 2)#Frec. Rel. Por respuesta
```

```
##      ans
## sex      N      S
##  H 0.3333333 0.4000000
##  M 0.6666667 0.6000000
```

```
colSums(tt)
```

```
## N S
## 3 5
```

```
rowSums(tt)
```

```
## H M  
## 3 5
```

```
colSums(prop.table(tt))
```

```
##      N      S  
## 0.375 0.625
```

```
rowSums(prop.table(tt))
```

```
##      H      M  
## 0.375 0.625
```

```
apply(tt, FUN = sum, MARGIN = 1)
```

```
## H M  
## 3 5
```

```
apply(tt, FUN = sqrt, MARGIN = c(1,2))
```

```
##      ans  
## sex      N      S  
##   H 1.000000 1.414214  
##   M 1.414214 1.732051
```