Tema 6: Datos multidimensionales

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Datos Multidimesnionales

Ejemplo con tres dimensiones

```
ans = sample(c("Si","No"), size= 100, replace = T)
sex = sample(c("H","M"), size = 100, replace = T)
place = sample(c("San Francisco", "Barcelona", "Valencia", "Cobija", "Asturias"), size = 100, replace =

table(sex, ans, place)
```

```
## , , place = Asturias
##
##    ans
## sex No Si
##   H  6  9
##   M  4  4
##
## , , place = Barcelona
##
##    ans
## sex No Si
##   H  7  7
##   M  5  6
##
## , , place = Cobija
##
##    ans
## sex No Si
##   H  6  5
##   M  2  5
##
## , , place = San Francisco
##
##    ans
## sex No Si
##   H  2  8
##   M  4  5
##
## , , place = Valencia
##
##    ans
## sex No Si
```

```
##   H  3  4
##   M  3  5
```

```
ftable(sex,ans,place)  # tabla en formato plano
```

```
##         place Asturias Barcelona Cobija San Francisco Valencia
## sex ans
## H   No              6         7      6             2        3
##     Si              9         7      5             8        4
## M   No              4         5      2             4        3
##     Si              4         6      5             5        5
```

```
ftable(sex, ans, place, col.vars =c("sex", "ans"))
```

```
##               sex  H     M
##               ans No Si No Si
## place
## Asturias           6  9  4  4
## Barcelona          7  7  5  6
## Cobija             6  5  2  5
## San Francisco      2  8  4  5
## Valencia           3  4  3  5
```

Filtrar las tablas

```
table(sex,ans,place)['M','Si','San Francisco']
```

```
## [1] 5
```

```
table(sex, ans, place)[ , 'Si', 'Valencia']
```

```
## H M
## 4 5
```

```
table(sex, ans, place)[ , 'No', ]
```

```
##    place
## sex Asturias Barcelona Cobija San Francisco Valencia
##   H        6         7      6             2        3
##   M        4         5      2             4        3
```

```
table(sex,ans,place)['M', ,'Cobija']
```

```
## No Si
##  2  5
```

Frecuencias relativas

```
prop.table(table(sex,ans,place)) # frec.relativas globales
```

```
## , , place = Asturias
##
##    ans
## sex   No   Si
##   H 0.06 0.09
##   M 0.04 0.04
##
## , , place = Barcelona
```

```
##
##    ans
## sex   No   Si
##   H 0.07 0.07
##   M 0.05 0.06
##
## , , place = Cobija
##
##    ans
## sex   No   Si
##   H 0.06 0.05
##   M 0.02 0.05
##
## , , place = San Francisco
##
##    ans
## sex   No   Si
##   H 0.02 0.08
##   M 0.04 0.05
##
## , , place = Valencia
##
##    ans
## sex   No   Si
##   H 0.03 0.04
##   M 0.03 0.05
```

```r
prop.table(table(sex,ans,place), margin = 3) # frec. relativa por lugar
```

```
## , , place = Asturias
##
##    ans
## sex        No        Si
##   H 0.2608696 0.3913043
##   M 0.1739130 0.1739130
##
## , , place = Barcelona
##
##    ans
## sex        No        Si
##   H 0.2800000 0.2800000
##   M 0.2000000 0.2400000
##
## , , place = Cobija
##
##    ans
## sex        No        Si
##   H 0.3333333 0.2777778
##   M 0.1111111 0.2777778
##
## , , place = San Francisco
##
##    ans
## sex        No        Si
##   H 0.1052632 0.4210526
```

```
##   M 0.2105263 0.2631579
##
## , , place = Valencia
##
##    ans
## sex        No        Si
##   H 0.2000000 0.2666667
##   M 0.2000000 0.3333333
```

```
prop.table(table(sex,ans,place), margin = c(1,3)) # frec relativa por sexo y país
```

```
## , , place = Asturias
##
##    ans
## sex        No        Si
##   H 0.4000000 0.6000000
##   M 0.5000000 0.5000000
##
## , , place = Barcelona
##
##    ans
## sex        No        Si
##   H 0.5000000 0.5000000
##   M 0.4545455 0.5454545
##
## , , place = Cobija
##
##    ans
## sex        No        Si
##   H 0.5454545 0.4545455
##   M 0.2857143 0.7142857
##
## , , place = San Francisco
##
##    ans
## sex        No        Si
##   H 0.2000000 0.8000000
##   M 0.4444444 0.5555556
##
## , , place = Valencia
##
##    ans
## sex        No        Si
##   H 0.4285714 0.5714286
##   M 0.3750000 0.6250000
```

```
ftable(prop.table(table(sex,ans,place))) # formato plano
```

```
##         place Asturias Barcelona Cobija San Francisco Valencia
## sex ans
## H   No            0.06      0.07   0.06          0.02     0.03
##     Si            0.09      0.07   0.05          0.08     0.04
## M   No            0.04      0.05   0.02          0.04     0.03
##     Si            0.04      0.06   0.05          0.05     0.05
```

?gmodels