Multivariante

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Datos Multidimensionales

Ejemplo con tres dimensiones

```
ans = sample(c("Si","No"), size = 100, replace = TRUE)
sex = sample(c("H","M"), size = 100, replace = TRUE)
place = sample(c("San francisco","Barcelona","Valencia","Mexico","Madrid"),
               size = 100, replace = TRUE )

table(sex,ans,place)
```

```
## , , place = Barcelona
##
##    ans
## sex No Si
##   H  5  5
##   M  6  4
##
## , , place = Madrid
##
##    ans
## sex No Si
##   H  4  3
##   M  2  5
##
## , , place = Mexico
##
##    ans
## sex No Si
##   H  2  9
##   M  7  5
##
## , , place = San francisco
##
##    ans
## sex No Si
##   H  5  5
##   M  5  3
##
## , , place = Valencia
```

```
##
##    ans
## sex No Si
##   H  6  7
##   M  5  7
```

```
ftable(sex,ans,place)
```

```
##         place Barcelona Madrid Mexico San francisco Valencia
## sex ans
## H   No                5      4      2             5        6
##     Si                5      3      9             5        7
## M   No                6      2      7             5        5
##     Si                4      5      5             3        7
```

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

```
##               sex  H     M
##               ans No Si No Si
## place
## Barcelona          5  5  6  4
## Madrid             4  3  2  5
## Mexico             2  9  7  5
## San francisco      5  5  5  3
## Valencia           6  7  5  7
```

Filtrar las tablas

```
table(sex,ans,place)["M","Si","San francisco"]
```

```
## [1] 3
```

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

```
## H M
## 7 7
```

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

```
##    place
## sex Barcelona Madrid Mexico San francisco Valencia
##   H         5      4      2             5        6
##   M         6      2      7             5        5
```

Frecuencias relativas

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

```
## , , place = Barcelona
##
##    ans
## sex   No   Si
##   H 0.05 0.05
##   M 0.06 0.04
##
## , , place = Madrid
##
##    ans
## sex   No   Si
##   H 0.04 0.03
##   M 0.02 0.05
##
## , , place = Mexico
##
##    ans
## sex   No   Si
##   H 0.02 0.09
##   M 0.07 0.05
##
## , , place = San francisco
##
##    ans
## sex   No   Si
##   H 0.05 0.05
##   M 0.05 0.03
##
## , , place = Valencia
##
##    ans
## sex   No   Si
##   H 0.06 0.07
##   M 0.05 0.07
```

```r
prop.table(table(sex, ans, place), margin = 3) # Frec.Relativa. Marginal por pais
```

```
## , , place = Barcelona
##
##    ans
## sex         No         Si
##   H 0.25000000 0.25000000
##   M 0.30000000 0.20000000
##
## , , place = Madrid
##
##    ans
## sex         No         Si
##   H 0.28571429 0.21428571
##   M 0.14285714 0.35714286
```

```
##
## , , place = Mexico
##
##    ans
## sex         No         Si
##   H 0.08695652 0.39130435
##   M 0.30434783 0.21739130
##
## , , place = San francisco
##
##    ans
## sex         No         Si
##   H 0.27777778 0.27777778
##   M 0.27777778 0.16666667
##
## , , place = Valencia
##
##    ans
## sex         No         Si
##   H 0.24000000 0.28000000
##   M 0.20000000 0.28000000
```

```
prop.table(table(sex, ans, place), margin = c(1,3)) # Frec.Relativa. Marginal por Sexo y pais
```

```
## , , place = Barcelona
##
##    ans
## sex        No        Si
##   H 0.5000000 0.5000000
##   M 0.6000000 0.4000000
##
## , , place = Madrid
##
##    ans
## sex        No        Si
##   H 0.5714286 0.4285714
##   M 0.2857143 0.7142857
##
## , , place = Mexico
##
##    ans
## sex        No        Si
##   H 0.1818182 0.8181818
##   M 0.5833333 0.4166667
##
## , , place = San francisco
##
##    ans
## sex        No        Si
##   H 0.5000000 0.5000000
##   M 0.6250000 0.3750000
##
## , , place = Valencia
##
```

```
##    ans
## sex        No        Si
##   H 0.4615385 0.5384615
##   M 0.4166667 0.5833333
```

```r
ftable(prop.table(table(sex,ans,place)))
```

```
##         place Barcelona Madrid Mexico San francisco Valencia
## sex ans
## H   No             0.05   0.04   0.02          0.05     0.06
##     Si             0.05   0.03   0.09          0.05     0.07
## M   No             0.06   0.02   0.07          0.05     0.05
##     Si             0.04   0.05   0.05          0.03     0.07
```