

02 - Multivariantes

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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", "Cobija", "Asturias"), size = 100, replace =
table(sex, ans, place)                                # Obtine una tabla bidimensional por cada ciudad
```

```
## , , place = Asturias
##
##      ans
## sex No Si
##  H   3   6
##  M   7   8
##
## , , place = Barcelona
##
##      ans
## sex No Si
##  H   6   5
##  M   3   5
##
## , , place = Cobija
##
##      ans
## sex No Si
##  H   3   5
##  M   4   7
##
## , , place = San Francisco
##
##      ans
## sex No Si
##  H  11   4
##  M   3   4
##
## , , place = Valencia
##
```

```
##      ans
## sex No Si
##   H  7  4
##   M  5  0
```

```
ftable(sex, ans, place) # Para hacerlo en una sola columna
```

```
##           place Asturias Barcelona Cobija San Francisco Valencia
## sex ans
## H   No           3           6           3           11           7
##     Si           6           5           5           4           4
## M   No           7           3           4           3           5
##     Si           8           5           7           4           0
```

```
ftable(sex, ans, place, col.vars = c("sex","ans")) # Para especificar que variable aparezca como fila y
```

```
##           sex H      M
##           ans No Si No Si
## place
## Asturias      3  6  7  8
## Barcelona      6  5  3  5
## Cobija         3  5  4  7
## San Francisco  11  4  3  4
## Valencia       7  4  5  0
```

Filtrar las tablas

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

```
## [1] 4
```

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

```
## H M
## 4 0
```

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

```
##      place
## sex Asturias Barcelona Cobija San Francisco Valencia
##   H           3           6           3           11           7
##   M           7           3           4           3           5
```

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

```
## No Si
##  4  7
```

Frecuencias relativas

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

```
# Frecuencias relativas globales
```

```
## , , place = Asturias
##
##      ans
## sex    No    Si
##  H 0.03 0.06
##  M 0.07 0.08
##
## , , place = Barcelona
##
##      ans
## sex    No    Si
##  H 0.06 0.05
##  M 0.03 0.05
##
## , , place = Cobija
##
##      ans
## sex    No    Si
##  H 0.03 0.05
##  M 0.04 0.07
##
## , , place = San Francisco
##
##      ans
## sex    No    Si
##  H 0.11 0.04
##  M 0.03 0.04
##
## , , place = Valencia
##
##      ans
## sex    No    Si
##  H 0.07 0.04
##  M 0.05 0.00
```

```
prop.table(table(sex,ans,place), margin = 3)
```

```
# Frecuencia relativa marginal por lugar
```

```
## , , place = Asturias
##
##      ans
## sex      No      Si
##  H 0.1250000 0.2500000
##  M 0.2916667 0.3333333
##
## , , place = Barcelona
##
##      ans
## sex      No      Si
```

```
## H 0.3157895 0.2631579
## M 0.1578947 0.2631579
##
## , , place = Cobija
##
## ans
## sex      No      Si
## H 0.1578947 0.2631579
## M 0.2105263 0.3684211
##
## , , place = San Francisco
##
## ans
## sex      No      Si
## H 0.5000000 0.1818182
## M 0.1363636 0.1818182
##
## , , place = Valencia
##
## ans
## sex      No      Si
## H 0.4375000 0.2500000
## M 0.3125000 0.0000000
```

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

```
## , , place = Asturias
##
## ans
## sex      No      Si
## H 0.3333333 0.6666667
## M 0.4666667 0.5333333
##
## , , place = Barcelona
##
## ans
## sex      No      Si
## H 0.5454545 0.4545455
## M 0.3750000 0.6250000
##
## , , place = Cobija
##
## ans
## sex      No      Si
## H 0.3750000 0.6250000
## M 0.3636364 0.6363636
##
## , , place = San Francisco
##
## ans
## sex      No      Si
## H 0.7333333 0.2666667
## M 0.4285714 0.5714286
##
```

```
## , , place = Valencia
##
##      ans
## sex      No      Si
##  H 0.6363636 0.3636364
##  M 1.0000000 0.0000000
```

```
fable(prop.table(table(sex, ans, place)))
```

```
##           place Asturias Barcelona Cobija San Francisco Valencia
## sex ans
## H  No           0.03      0.06   0.03           0.11      0.07
##   Si           0.06      0.05   0.05           0.04      0.04
## M  No           0.07      0.03   0.04           0.03      0.05
##   Si           0.08      0.05   0.07           0.04      0.00
```