

# Tablas

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#\_\_\_\_\_TABLAS DE FRECUENCIAS\_\_\_\_\_

Se implementa la matriz iris

#\_\_\_\_\_# Exploración de la Matriz Iris #\_\_\_\_\_

## 1.- Importación de la matriz

```
data(iris)
data(iris)
```

## 2.- Exploración de la matriz

```
dim(iris)
dim(iris)

## [1] 150   5
```

## 3.- Nombre de las columnas

```
colnames(iris)
colnames(iris)

## [1] "Sepal.Length" "Sepal.Width" "Petal.Length" "Petal.Width" "Species"
```

## 4.- Tipo de variables

```
str(iris)
str(iris)

## 'data.frame':   150 obs. of  5 variables:
## $ Sepal.Length: num  5.1 4.9 4.7 4.6 5 5.4 4.6 5 4.4 4.9 ...
## $ Sepal.Width : num  3.5 3 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 ...
## $ Petal.Length: num  1.4 1.4 1.3 1.5 1.4 1.7 1.4 1.5 1.4 1.5 ...
## $ Petal.Width : num  0.2 0.2 0.2 0.2 0.2 0.4 0.3 0.2 0.2 0.1 ...
## $ Species      : Factor w/ 3 levels "setosa","versicolor",...: 1 1 1 1 1 1 1 1 1 1 ...
```

## 5.- En busca de datos perdidos

```
anyNA(iris)
```

```
anyNA(iris)
```

```
## [1] FALSE
```

```
#----- # Generación de tablas #-----
```

1.- Convertimos la matriz de datos a un data frame, se

Agrupamos los valores para la variable Petal.Length

y se calcula la frecuencia absoluta.

```
tabla_PL<-as.data.frame(table(PL = iris$Petal.Length))
```

```
tabla_PL<-as.data.frame(table(PL = iris$Petal.Length))
```

2.- Frecuencia absoluta de la variable Petal.Length (PL)

Se muestra la tabla de contingencia para la variable PL

con su respectiva frecuencia absoluta.

```
tabla_PL
```

```
tabla_PL
```

```
##      PL Freq
## 1      1     1
## 2     1.1     1
## 3     1.2     2
## 4     1.3     7
## 5     1.4    13
## 6     1.5    13
## 7     1.6     7
## 8     1.7     4
## 9     1.9     2
## 10      3     1
## 11    3.3     2
## 12    3.5     2
## 13    3.6     1
## 14    3.7     1
## 15    3.8     1
## 16    3.9     3
## 17     4     5
## 18    4.1     3
## 19    4.2     4
## 20    4.3     2
## 21    4.4     4
## 22    4.5     8
## 23    4.6     3
```

```
## 24 4.7 5
## 25 4.8 4
## 26 4.9 5
## 27 5 4
## 28 5.1 8
## 29 5.2 2
## 30 5.3 2
## 31 5.4 2
## 32 5.5 3
## 33 5.6 6
## 34 5.7 3
## 35 5.8 3
## 36 5.9 2
## 37 6 2
## 38 6.1 3
## 39 6.3 1
## 40 6.4 1
## 41 6.6 1
## 42 6.7 2
## 43 6.9 1
```

### 3.- Se contruye la tabla de frecuencias completas redondeando

#las frecuencias absolutas a 3 decimales `tabla_no_agrupada<-transform(tabla_PL, freqAc=cumsum(Freq), Rel= round(prop.table(Freq),3), RelAc=round(cumsum(prop.table(Freq)),3))`

```
tabla_no_agrupada<-transform(tabla_PL,
  freqAc=cumsum(Freq),
  Rel= round(prop.table(Freq),3),
  RelAc=round(cumsum(prop.table(Freq)),3))
```

`tabla_no_agrupada`

`tabla_no_agrupada`

##	PL	Freq	freqAc	Rel	RelAc
## 1	1	1	1	0.007	0.007
## 2	1.1	1	2	0.007	0.013
## 3	1.2	2	4	0.013	0.027
## 4	1.3	7	11	0.047	0.073
## 5	1.4	13	24	0.087	0.160
## 6	1.5	13	37	0.087	0.247
## 7	1.6	7	44	0.047	0.293
## 8	1.7	4	48	0.027	0.320
## 9	1.9	2	50	0.013	0.333
## 10	3	1	51	0.007	0.340
## 11	3.3	2	53	0.013	0.353
## 12	3.5	2	55	0.013	0.367
## 13	3.6	1	56	0.007	0.373
## 14	3.7	1	57	0.007	0.380
## 15	3.8	1	58	0.007	0.387
## 16	3.9	3	61	0.020	0.407
## 17	4	5	66	0.033	0.440
## 18	4.1	3	69	0.020	0.460
## 19	4.2	4	73	0.027	0.487

```
## 20 4.3    2    75 0.013 0.500
## 21 4.4    4    79 0.027 0.527
## 22 4.5    8    87 0.053 0.580
## 23 4.6    3    90 0.020 0.600
## 24 4.7    5    95 0.033 0.633
## 25 4.8    4    99 0.027 0.660
## 26 4.9    5   104 0.033 0.693
## 27  5     4   108 0.027 0.720
## 28 5.1    8   116 0.053 0.773
## 29 5.2    2   118 0.013 0.787
## 30 5.3    2   120 0.013 0.800
## 31 5.4    2   122 0.013 0.813
## 32 5.5    3   125 0.020 0.833
## 33 5.6    6   131 0.040 0.873
## 34 5.7    3   134 0.020 0.893
## 35 5.8    3   137 0.020 0.913
## 36 5.9    2   139 0.013 0.927
## 37  6     2   141 0.013 0.940
## 38 6.1    3   144 0.020 0.960
## 39 6.3    1   145 0.007 0.967
## 40 6.4    1   146 0.007 0.973
## 41 6.6    1   147 0.007 0.980
## 42 6.7    2   149 0.013 0.993
## 43 6.9    1   150 0.007 1.000
```

#### 4.- Agruparemos las variables en 8 clases y se calcula la frecuencia absoluta

```
tabla_clases<-as.data.frame(table (Petal.length = factor (cut(iris$Petal.Length, breaks = 8))))
tabla_clases<-as.data.frame(table (Petal.length = factor
                                   (cut(iris$Petal.Length,
                                       breaks = 8))))
```

#### 5.- Visualizamos la tabla de clases

```
tabla_clases
```

#### 6.- Contrucción de la tabla de frecuencias completa redondeando las frecuencias

##### relativas a 3 decimales

```
tabla_agrupada<-tabla<-transform(tabla_clases, freqAc=cumsum(Freq), Rel= round(prop.table(Freq),3),
                                RelAc=round(cumsum(prop.table(Freq)),3))
tabla_agrupada<-tabla<-transform(tabla_clases,
                                freqAc=cumsum(Freq),
                                Rel= round(prop.table(Freq),3),
                                RelAc=round(cumsum(prop.table(Freq)),3))
```

```
tabla_agrupada
```

```
tabla_agrupada
```

```
##   Petal.length Freq freqAc   Rel RelAc
## 1 (0.994,1.74]   48    48 0.320 0.320
## 2 (1.74,2.48]    2    50 0.013 0.333
## 3 (2.48,3.21]    1    51 0.007 0.340
## 4 (3.21,3.95]   10    61 0.067 0.407
## 5 (3.95,4.69]   29    90 0.193 0.600
## 6 (4.69,5.43]   32   122 0.213 0.813
## 7 (5.43,6.16]   22   144 0.147 0.960
## 8 (6.16,6.91]    6   150 0.040 1.000
```

## 7.- Organización visual de la tabla (variable Petal.length)

### 7.1.- Instalamos la librería knitr

```
install.packages("knitr")
```

```
install.packages("knitr")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
```

### 7.2.- Se abre la librería

```
library(knitr)
```

```
library(knitr)
```

### 7.3.- Se visualiza la tabla

```
kable(tabla_no_agrupada) kable(tabla_agrupada)
```

```
kable(tabla_no_agrupada)
```

PL	Freq	freqAc	Rel	RelAc
1	1	1	0.007	0.007
1.1	1	2	0.007	0.013
1.2	2	4	0.013	0.027
1.3	7	11	0.047	0.073
1.4	13	24	0.087	0.160
1.5	13	37	0.087	0.247
1.6	7	44	0.047	0.293
1.7	4	48	0.027	0.320
1.9	2	50	0.013	0.333
3	1	51	0.007	0.340
3.3	2	53	0.013	0.353
3.5	2	55	0.013	0.367
3.6	1	56	0.007	0.373
3.7	1	57	0.007	0.380
3.8	1	58	0.007	0.387
3.9	3	61	0.020	0.407

PL	Freq	freqAc	Rel	RelAc
4	5	66	0.033	0.440
4.1	3	69	0.020	0.460
4.2	4	73	0.027	0.487
4.3	2	75	0.013	0.500
4.4	4	79	0.027	0.527
4.5	8	87	0.053	0.580
4.6	3	90	0.020	0.600
4.7	5	95	0.033	0.633
4.8	4	99	0.027	0.660
4.9	5	104	0.033	0.693
5	4	108	0.027	0.720
5.1	8	116	0.053	0.773
5.2	2	118	0.013	0.787
5.3	2	120	0.013	0.800
5.4	2	122	0.013	0.813
5.5	3	125	0.020	0.833
5.6	6	131	0.040	0.873
5.7	3	134	0.020	0.893
5.8	3	137	0.020	0.913
5.9	2	139	0.013	0.927
6	2	141	0.013	0.940
6.1	3	144	0.020	0.960
6.3	1	145	0.007	0.967
6.4	1	146	0.007	0.973
6.6	1	147	0.007	0.980
6.7	2	149	0.013	0.993
6.9	1	150	0.007	1.000

```
kable(tabla_agrupada)
```

Petal.length	Freq	freqAc	Rel	RelAc
(0.994,1.74]	48	48	0.320	0.320
(1.74,2.48]	2	50	0.013	0.333
(2.48,3.21]	1	51	0.007	0.340
(3.21,3.95]	10	61	0.067	0.407
(3.95,4.69]	29	90	0.193	0.600
(4.69,5.43]	32	122	0.213	0.813
(5.43,6.16]	22	144	0.147	0.960
(6.16,6.91]	6	150	0.040	1.000