

Correlaciones

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#Utilidad

Esta metodología sirve para identificar la relación entre dos variables de tipo **cuantitativo**. Los datos se distribuyen de forma normal. Area: Estadística Paramétrica. Y se utiliza la matriz “penguins.xlsx” como ejemplo.

#Librerías

```
library(readxl)
```

```
penguins<-read_excel("penguins.xlsx")
```

#Exploración de variables

1.- Dimensión

```
dim(penguins)
```

```
## [1] 344 9
```

2.- Tipos de variables

```
str(penguins)
```

```
## tibble [344 x 9] (S3: tbl_df/tbl/data.frame)
## $ ID           : chr [1:344] "i1" "i2" "i3" "i4" ...
## $ especie      : chr [1:344] "Adelie" "Adelie" "Adelie" "Adelie" ...
## $ isla         : chr [1:344] "Torgersen" "Torgersen" "Torgersen" "Torgersen" ...
## $ largo_pico_mm : num [1:344] 39.1 39.5 40.3 37.8 36.7 39.3 38.9 39.2 34.1 42 ...
## $ grosor_pico_mm : num [1:344] 18.7 17.4 18 18.1 19.3 20.6 17.8 19.6 18.1 20.2 ...
## $ largo_aleta_mm : num [1:344] 181 186 195 190 193 190 181 195 193 190 ...
## $ masa_corporal_g: num [1:344] 3750 3800 3250 3700 3450 ...
## $ genero       : chr [1:344] "male" "female" "female" "female" ...
## $ año          : num [1:344] 2007 2007 2007 2007 2007 ...
```

3.- Identificar la especie Adelie

```
penguins$especie
```

```
## [1] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie"
## [7] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie"
## [13] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie"
## [19] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie"
## [25] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie"
## [31] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie"
## [37] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie"
## [43] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie"
## [49] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie"
```

```

## [55] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [61] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [67] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [73] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [79] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [85] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [91] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [97] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [103] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [109] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [115] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [121] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [127] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [133] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [139] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [145] "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"      "Adelie"
## [151] "Adelie"      "Adelie"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [157] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [163] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [169] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [175] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [181] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [187] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [193] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [199] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [205] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [211] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [217] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [223] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [229] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [235] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [241] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [247] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [253] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [259] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [265] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [271] "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"      "Gentoo"
## [277] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [283] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [289] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [295] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [301] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [307] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [313] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [319] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [325] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [331] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [337] "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"  "Chinstrap"
## [343] "Chinstrap"  "Chinstrap"

```

4.- Seleccionar las observaciones de la 1 a la 152 y las variables cuantitativas

```
colnames(penguins)
```

```
## [1] "ID"           "especie"      "isla"         "largo_pico_mm"
```

```
## [5] "grosor_pico_mm" "largo_aleta_mm" "masa_corporal_g" "genero"
## [9] "año"

adeli<-penguins[1:152,4:7]
```

Verificación de la matriz

```
str(adeli)

## tibble [152 x 4] (S3: tbl_df/tbl/data.frame)
## $ largo_pico_mm : num [1:152] 39.1 39.5 40.3 37.8 36.7 39.3 38.9 39.2 34.1 42 ...
## $ grosor_pico_mm : num [1:152] 18.7 17.4 18 18.1 19.3 20.6 17.8 19.6 18.1 20.2 ...
## $ largo_aleta_mm : num [1:152] 181 186 195 190 193 190 181 195 193 190 ...
## $ masa_corporal_g: num [1:152] 3750 3800 3250 3700 3450 ...
```

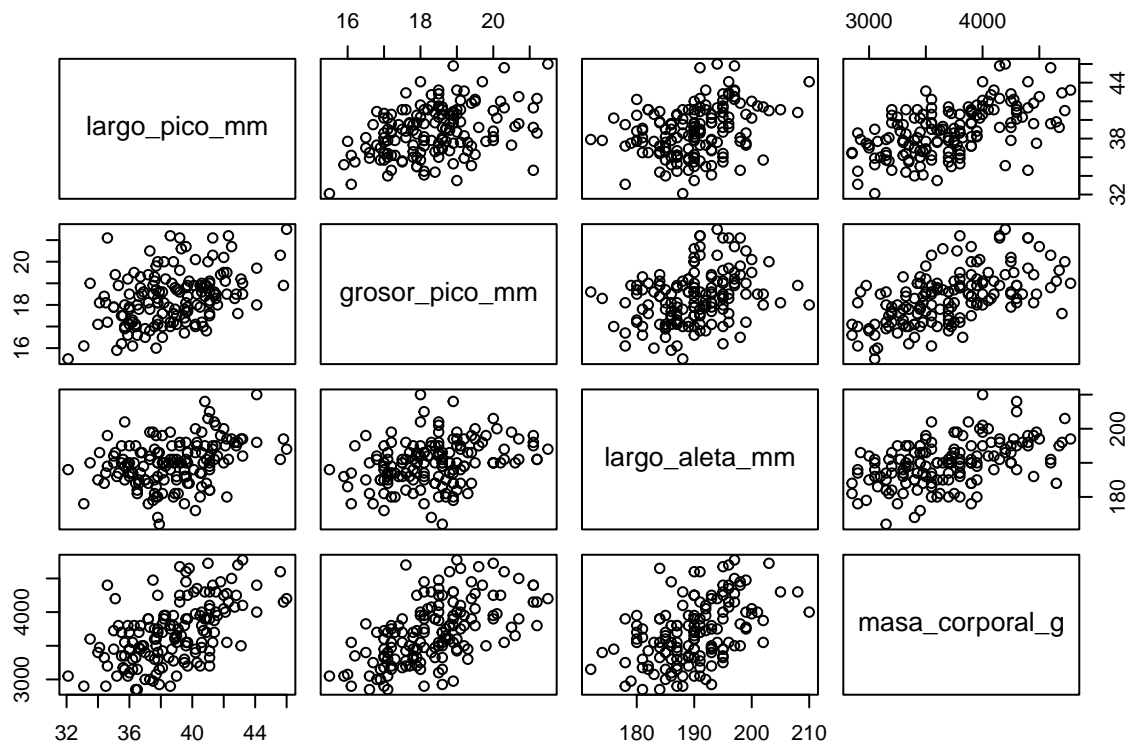
#Metodología

1.- Cálculo de la correlación

```
cor_adeli<-cor(adeli)
```

2.- Realización del plot de correlaciones

```
plot(adeli)
```



zación de la tabla de correlaciones

librerías

```
library(knitr)
```

Organización

```
kable(cor_adeli)
```

3.- Organi-

	largo_pico_mm	grosor_pico_mm	largo_aleta_mm	masa_corporal_g
largo_pico_mm	1.0000000	0.3917580	0.3256178	0.5486177
grosor_pico_mm	0.3917580	1.0000000	0.3075689	0.5760619
largo_aleta_mm	0.3256178	0.3075689	1.0000000	0.4682015
masa_corporal_g	0.5486177	0.5760619	0.4682015	1.0000000