

Correlaciones

Gelitzzy Lopez Cruz

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#Utilidad Esta metodologia sirve para identificar la relacion entre dos variables de tipo **cuantitativo**. Los datos se distribuyen de forma normal. Area: Parametrica y se utiliza la matriz “penguins.xlsx” como ejemplo.

#Librerias

```
library(readxl)
```

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

#Exploracion de variables 1.- Dimension

```
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]
```

Verificacion de la matriz

```
str(adeli)

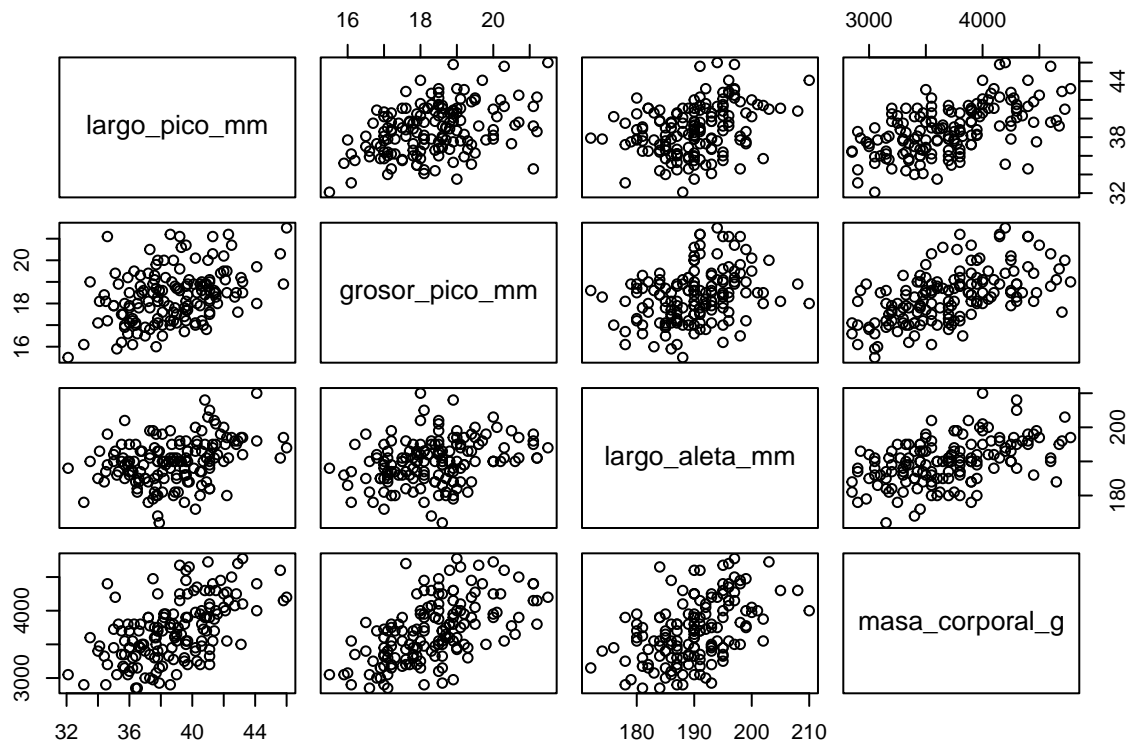
## tibble [152 x 4] (S3: tbl_df/tbl/data.frame)
## $ largo_pico_mm : num [1:152] 39.1 39.5 40.3 37.8 36.7 39.3 38.9 39.2 34.1 42 ...
## $ grosor_pico_mm : num [1:152] 18.7 17.4 18 18.1 19.3 20.6 17.8 19.6 18.1 20.2 ...
## $ largo_aleta_mm : num [1:152] 181 186 195 190 193 190 181 195 193 190 ...
## $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

metodologia

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

2.- Realizacion del plot de correlaciones

```
plot(adeli)
```



Librerias

```
library(knitr)
```

3.- Organizacion de la tabla de correlaciones

```
kable(cor_adeli)
```

| | 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 |

Correlaciones de Spearman

1.- Identificar las variables Para datos con distribucion NO Normal Area: Estadistica NO Parametrica Se utiliza la matriz marvel.xlsx