TAREA MODULO 2.

# ANÁLISIS DE FACTORES DE ATAQUE ENTRE LOS CENTRO CAMPISTAS CON MÁS DE 1000´EN EL CAMPEONATO DE LIGA ESPAÑOLA.

1. **LECTURA Y FILTRADO.**
   Filtramos el data set de **FBREF_players.csv.** Para obtener los datos exclusivamente de los centrocampistas que han jugado más de 1000 minutos en La Liga.

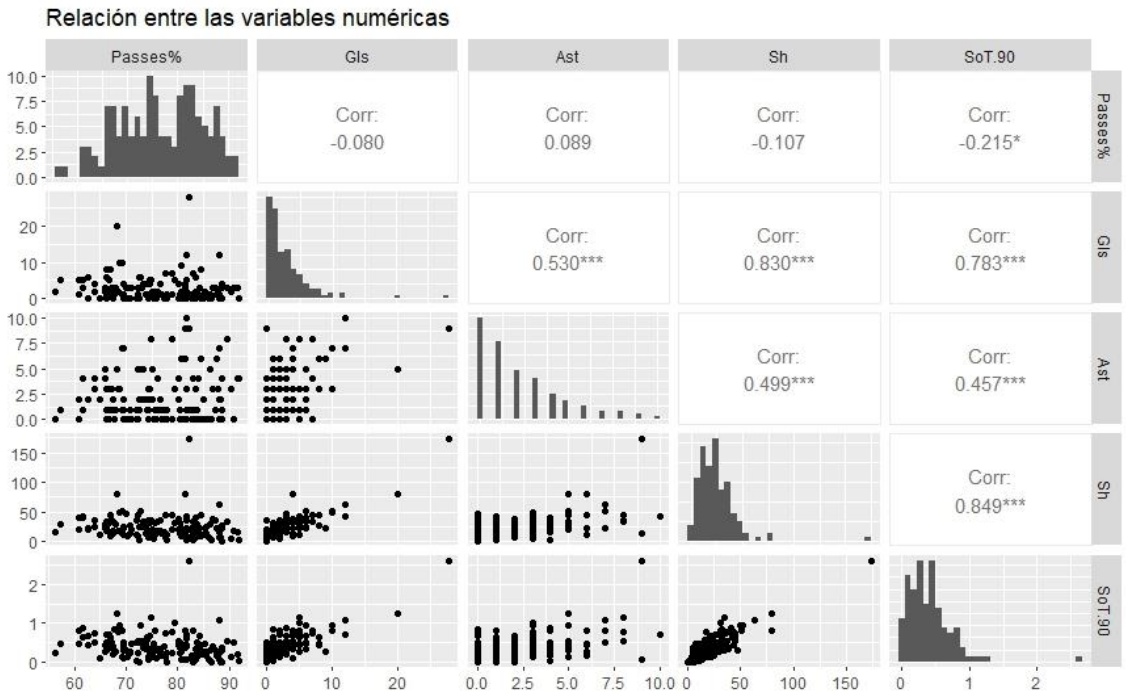
| | Player | Squad | Pos | Age | MP | Min | Gls | G.PK | Ast | xG | xA | Gls.90 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Martin Agirregabiria | Alavés | DF,MF | 24 | 23 | 1374 | 0 | 0 | 1 | 0.2 | 0.9 | 0.00 | |
| 2 | Rubén Alcaraz | Valladolid | MF | 30 | 27 | 2020 | 1 | 1 | 0 | 1.5 | 0.6 | 0.04 | |
| 3 | Carles Aleñá | Getafe | MF,FW | 23 | 18 | 1111 | 1 | 1 | 2 | 1.7 | 1.3 | 0.08 | |
| 4 | Sergio Álvarez | Eibar | MF,DF | 29 | 26 | 1539 | 0 | 0 | 0 | 0.3 | 0.9 | 0.00 | |
| 5 | Mauro Arambarri | Getafe | MF | 25 | 32 | 2803 | 3 | 3 | 0 | 2.2 | 2.1 | 0.10 | |
| 6 | Marco Asensio | Real Madrid | FW,MF | 25 | 31 | 1728 | 4 | 4 | 2 | 4.6 | 3.0 | 0.21 | |

Seleccionamos solo las columnas que nos interesan : metrics <- c("Player", "Squad", "MP", "Min", "Passes.","Gls","Ast","Sh","Sh.90","SoT.90",
"PassesCompleted.90", "LongPasses.", "LongPassesCompleted.90", "ShortPasses.","MediumPasses.","LongPasses.",
"PassesProgressive.90","PassesAttempted.90","ShortPassesCompleted.90", "MediumPassesCompleted.90","TotDistPasses.90",
"FinalThirdPasses.90")

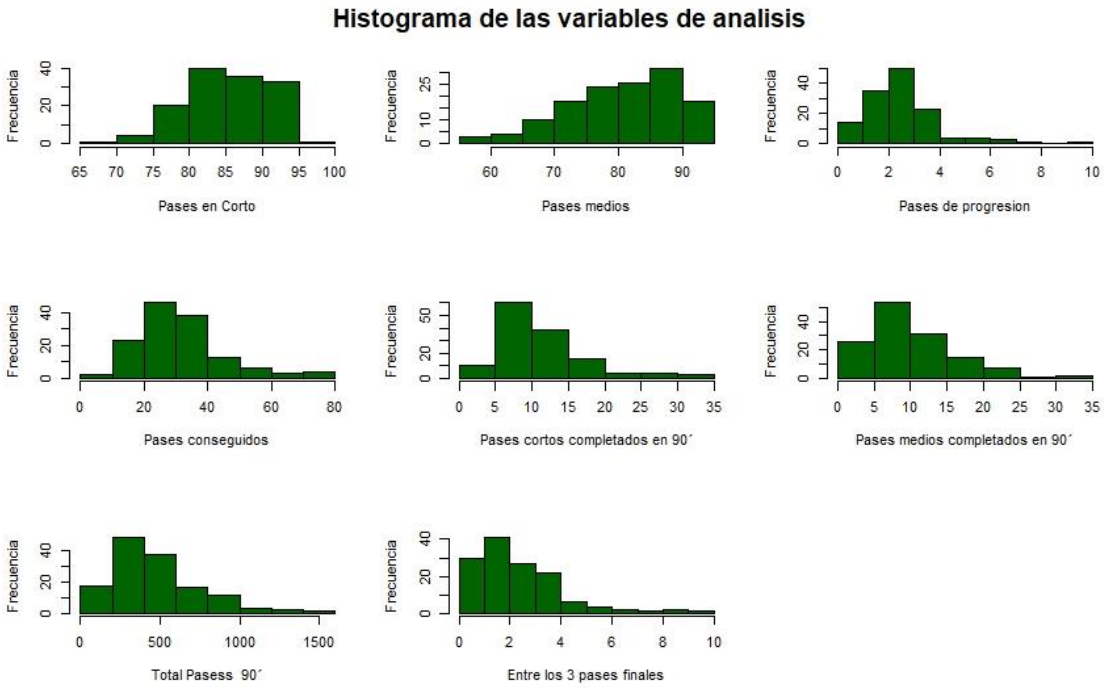
Hay 301 jugadores con más de 1000´.

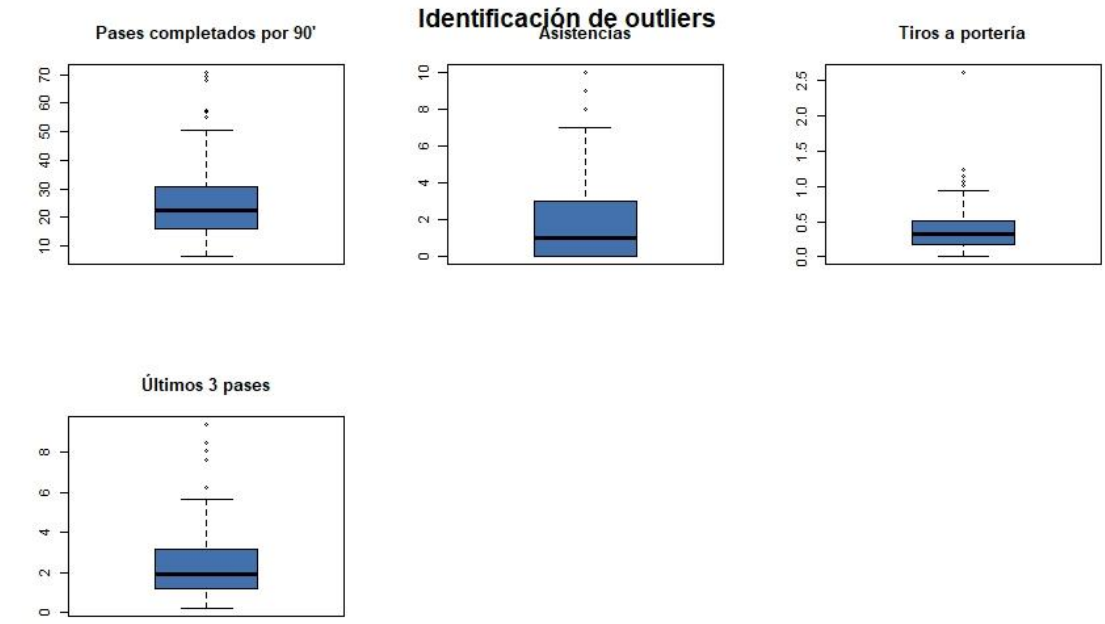
Y centro campistas exactamente : 135

2. **Análisis Exploratorio de datos del data set.**

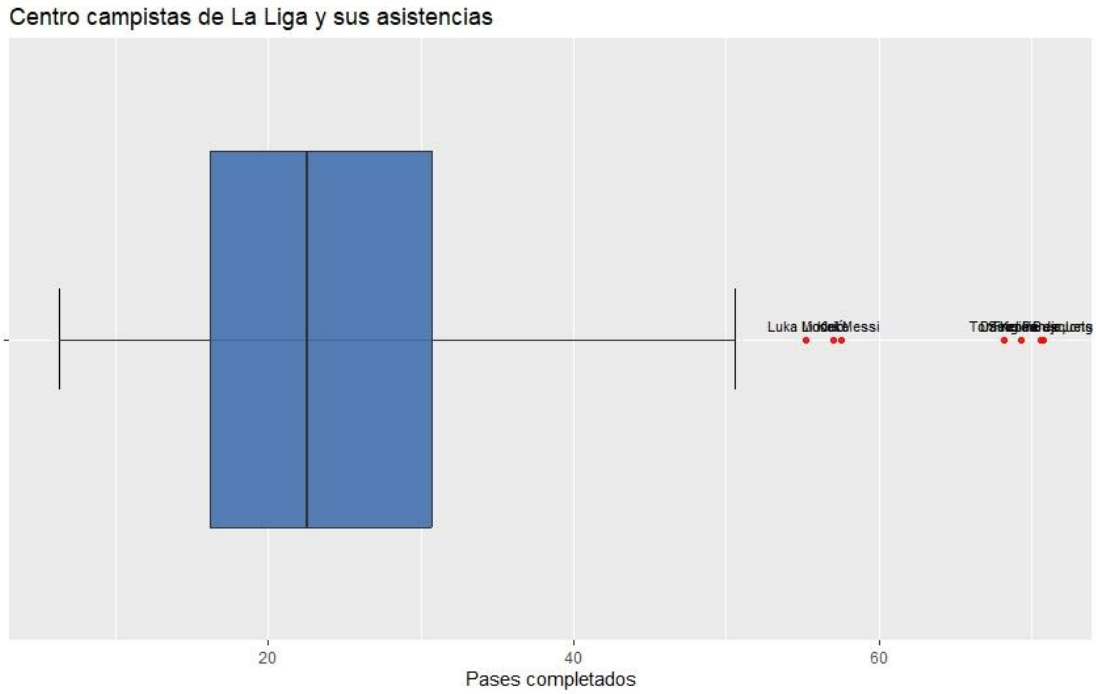


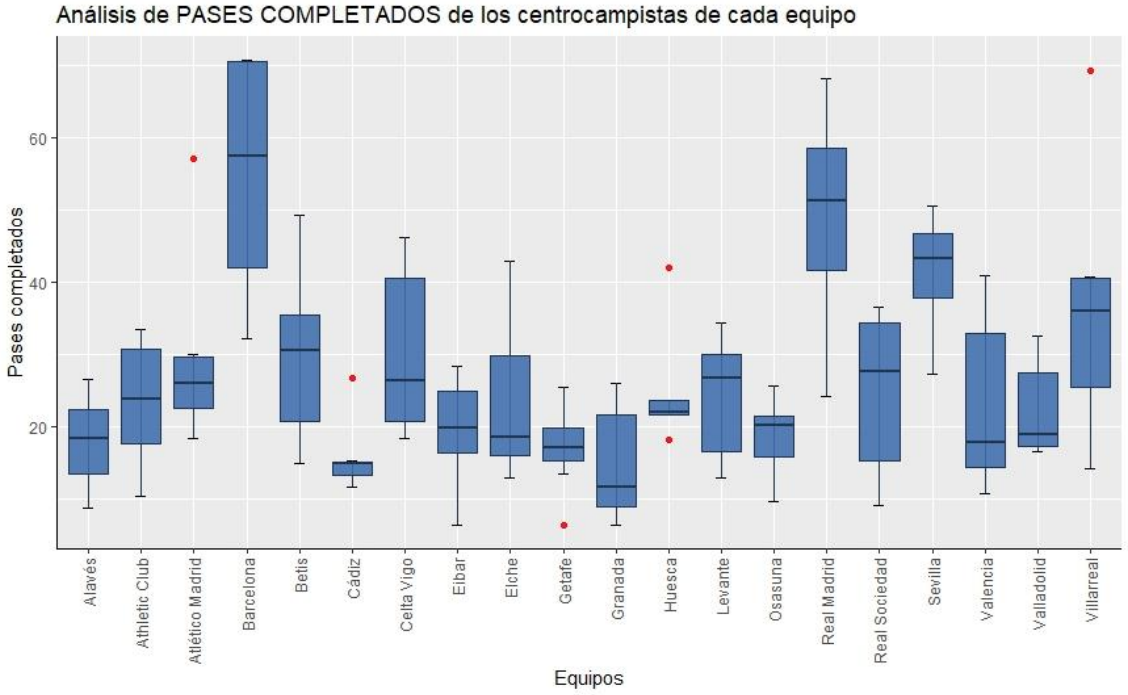
Vemos que no hay nulos .



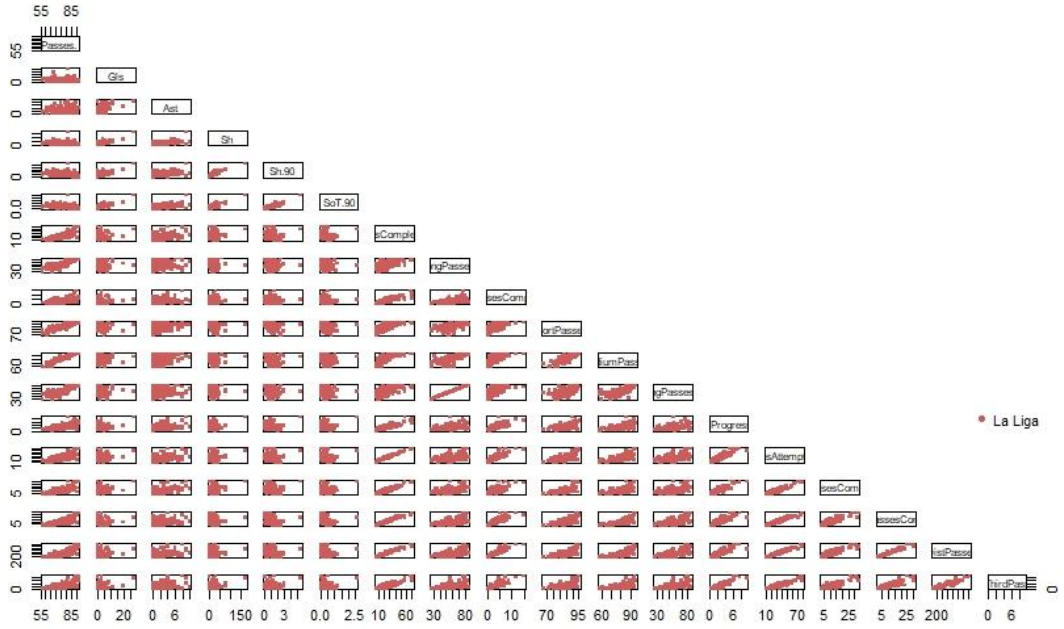

Analizamos la variable Pases completados en 90 ´


Centro campistas de La Liga y sus asistencias
Luka
Messi
20
40
60
Pases completados

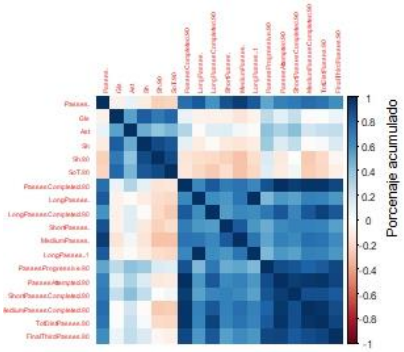

Análisis de PASES COMPLETADOS de los centrocampistas de cada equipo
Pases completados
60
40
20
Alavés
Athletic Club
Atlético Madrid
Barcelona
Betis
Cádiz
Celta Vigo
Eibar
Elche
Getafe
Granada
Huesca
Levante
Osasuna
Real Madrid
Real Sociedad
Sevilla
Valencia
Valladolid
Villarreal
Equipos

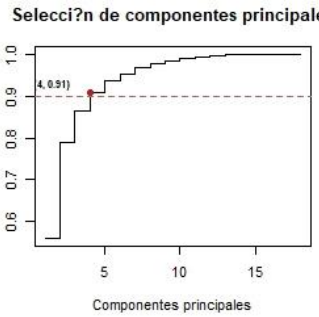
### 3. Análisis de componentes principales.

Ver correlación entre variables elegidas:

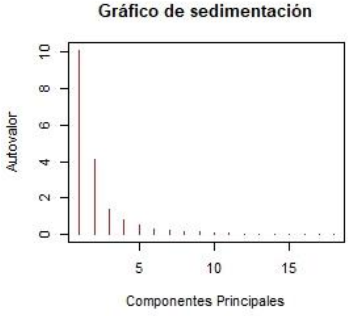



Matriz de correlación



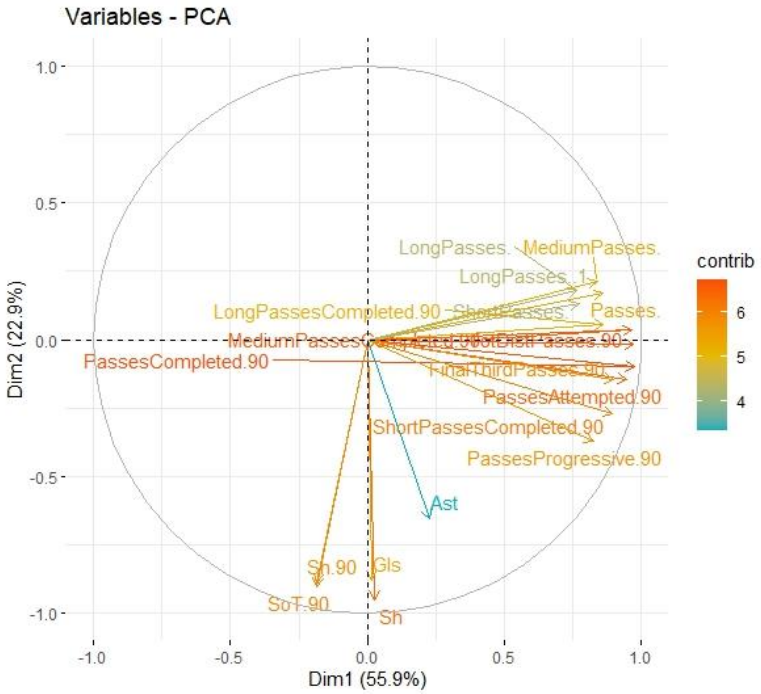




| | PC1 | PC2 | PC3 | PC4 | PC5 |
|---|---|---|---|---|---|
| Passes. | 0.270683918 | 0.08362640 | 0.35807733 | 0.22003053 | -0.08132534 |
| Gls | 0.004470815 | -0.43232833 | 0.13105746 | 0.02056960 | 0.07746005 |
| Ast | 0.071699893 | -0.32087001 | -0.12212651 | 0.52209831 | 0.70831690 |
| Sh | 0.008289259 | -0.46747987 | 0.09293585 | -0.14426421 | -0.16039264 |
| Sh.90 | -0.058640988 | -0.43692920 | 0.19938946 | -0.18025619 | -0.18557418 |
| SoT.90 | -0.058928410 | -0.44460835 | 0.20166913 | -0.00828406 | -0.15110211 |
| PassesCompleted.90 | 0.306670062 | -0.04945008 | -0.14060630 | 0.01056093 | -0.01255897 |
| LongPasses. | 0.241024186 | 0.08809171 | 0.43808876 | -0.28553536 | 0.31939020 |
| LongPassesCompleted.90 | 0.271241907 | 0.02777160 | -0.17673973 | -0.27145953 | 0.04132575 |
| ShortPasses. | 0.242874113 | 0.06465741 | 0.21693766 | 0.49169333 | -0.36885314 |
| MediumPasses. | 0.264299307 | 0.10592120 | 0.25823926 | 0.23732441 | -0.20689362 |
| LongPasses..1 | 0.241024186 | 0.08809171 | 0.43808876 | -0.28553536 | 0.31939020 |
| PassesProgressive.90 | 0.259550674 | -0.18282094 | -0.22793425 | -0.09213832 | -0.10195024 |
| PassesAttempted.90 | 0.298378678 | -0.07132048 | -0.21831516 | -0.01376991 | -0.02104028 |
| ShortPassesCompleted.90 | 0.281448544 | -0.13372396 | -0.11607128 | 0.17056969 | -0.05491336 |

Coeficiente de correlaciones

| | | | | | |
|---|---|---|---|---|---|
| Passes. | 0.85877100 | 0.16984583 | 0.4163880 | 0.196451783 | -0.057948908 |
| Gls | 0.01418409 | -0.87806198 | 0.1523994 | 0.018365338 | 0.055194671 |
| Ast | 0.22747487 | -0.65168932 | -0.1420141 | 0.466149592 | 0.504715862 |
| Sh | 0.02629848 | -0.94945500 | 0.1080699 | -0.128804674 | -0.114288831 |
| Sh.90 | -0.18604423 | -0.88740638 | 0.2318588 | -0.160939708 | -0.132232102 |
| SoT.90 | -0.18695610 | -0.90300278 | 0.2345097 | -0.007396330 | -0.107668805 |
| PassesCompleted.90 | 0.97294053 | -0.10043348 | -0.1635032 | 0.009429205 | -0.008948977 |
| LongPasses. | 0.76467262 | 0.17891491 | 0.5094288 | -0.254937025 | 0.227583585 |
| LongPassesCompleted.90 | 0.86054127 | 0.05640432 | -0.2055207 | -0.242369585 | 0.029446936 |
| ShortPasses. | 0.77054169 | 0.13131967 | 0.2522646 | 0.439002843 | -0.262828726 |
| MediumPasses. | 0.83851520 | 0.21512673 | 0.3002919 | 0.211892423 | -0.147423411 |
| LongPasses..1 | 0.76467262 | 0.17891491 | 0.5094288 | -0.254937025 | 0.227583585 |
| PassesProgressive.90 | 0.82344970 | -0.37131065 | -0.2650519 | -0.082264658 | -0.072645310 |
| PassesAttempted.90 | 0.94663531 | -0.14485241 | -0.2538664 | -0.012294305 | -0.014992393 |
| ShortPassesCompleted.90 | 0.89292282 | -0.27159433 | -0.1349728 | 0.152291226 | -0.039128879 |


Variables - PCA
1.0
0.5
0.0
-0.5
-1.0
Dim2 (22.9%)
-1.0
-0.5
0.0
0.5
1.0
Dim1 (55.9%)
LongPasses.
MediumPasses.
LongPasses.1
LongPassesCompleted.90
ShortPasses
Passes.
PassesCompleted.90
FinalThirdPasses.90
PassesAttempted.90
ShortPassesCompleted.90
PassesProgressive.90
Ast
Sh.90
Gls
SoT.90
Sh
contrib
6
5
4