Performance_popularity_salary

2023-01-13

```
library(readr)
library(corrplot)
```

```
## corrplot 0.92 loaded
```

```
library(magrittr)
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 4.1.3
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(leaps)
library(MASS)
```

```
##
## Attaching package: 'MASS'
```

```
## The following object is masked from 'package:dplyr':
##
##     select
```

```
library(car)
```

```
## Loading required package: carData
```

```
## Warning: package 'carData' was built under R version 4.1.3
```

```
##
## Attaching package: 'car'
```

```
## The following object is masked from 'package:dplyr':
##
##     recode
```

```
library(readr)
read.csv('/R Files/PPS/Performance.csv', header = TRUE)
```

```
##                      Players  MPG  PPG   PER AllStar Instafollowers Instagram
## 1               Marcus Smart  32.3 12.1 13.67       0         768000         1
## 2               Jaylen Brown  33.6 23.6 18.98       1        2500000         1
## 3               Jayson Tatum  35.9 26.9 21.87       3        5200000         1
## 4         Robert Williams III 29.6 10.0 22.10       0         237000         1
## 5               Derrick White 27.4 11.0 13.01       0         158000         1
## 6                  Al Horford 29.1 10.2 16.71       5         665000         1
## 7                 Trae Young  34.9 28.4 25.48       2        4800000         1
## 8               John Collins  30.8 16.2 18.75       0         209000         1
## 9           Bogdan Bogdanovic  29.3 15.1 15.49       0         620000         1
## 10            De'Andre Hunter  29.8 13.4 10.66       0          94300         1
## 11              Kevin Huerter  29.6 12.1 11.91       0         118000         1
## 12              Clint Capela  27.6 11.1 21.43       0         403000         1
## 13               Kyrie Irving 37.7 27.4 21.49       7        17300000         1
## 14              Kevin Durant  37.2 29.9 25.69      12        13000000         1
## 15               Goran Dragic 25.5  7.3  8.63       1         482000         1
## 16                Joe Harris  30.2 11.3  9.64       0         125000         1
## 17                Seth Curry 29.9 14.9 14.61       0        2100000         1
## 18                Patty Mills 29.0 11.4 10.43       0         588000         1
## 19             Miles Bridges  35.5 20.2 17.97       0         701000         1
## 20              Terry Rozier  33.7 19.3 17.62       0         552000         1
## 21               LaMelo Ball  32.3 20.1 19.76       1        9300000         1
## 22            Gordon Hayward  31.9 15.9 15.11       1        1200000         1
## 23              PJ Washington  27.2 10.3 13.60       0         827000         1
## 24                Kelly Oubre  26.3 15.0 15.01       0        1700000         1
## 25              Demar Derozan  36.1 27.9 23.13       5        3200000         1
## 26                Zach Lavine  34.7 24.4 20.08       2        2500000         1
## 27                 Lonzo Ball  34.6 13.0 14.49       0       14900000         1
## 28              Nikola Vucevic  33.1 17.6 18.27       2              0         0
## 29                 Alex Caruso  28.0  7.4 11.75       0        1600000         1
## 30                Coby White  27.5 12.7 12.60       0         427000         1
## 31             Darius Garland  35.7 21.7 19.04       1         436000         1
## 32                Evan Mobley  33.8 15.0 16.15       0         218000         1
## 33              Jarrett Allen  32.3 16.1 23.08       1         254000         1
## 34           Lauri Markkanen  30.8 14.8 14.76       0         280000         1
## 35                Caris LeVert 29.8 13.6 12.45       0         253000         1
## 36                Isaac Okoro  29.6  8.8 10.39       0         172000         1
## 37                Luka Doncic  35.4 28.4 25.13       3        7300000         1
## 38       Dorian Finney-Smith  33.1 11.0 12.56       0          94100         1
## 39             Jalen Brunson  31.9 16.3 17.14       0         190000         1
## 40          Tim Hardaway Jr.  29.6 14.2 12.79       0         492000         1
## 41          Spencer Dinwiddie 28.3 15.8 19.03       0         300000         1
## 42            Reggie Bullock  28.0  8.6  9.25       0         191000         1
## 43              Nikola Jokic  33.5 27.1 32.94       4              0         0
## 44               Will Barton  32.1 14.7 13.42       0              0         0
## 45              Aaron Gordon  31.7 15.0 15.38       0        1100000         1
## 46              Monte Morris  29.9 12.6 14.75       0         140000         1
## 47                Jeff Green  24.7 10.3 12.51       0              0         0
## 48              Austin Rivers  22.1  6.0  7.24       0         418000         1
## 49                 Saddiq Bey  33.0 16.1 14.08       0          57000         1
```

```
## 50           Cade Cunningham  32.6 17.4 13.12       0         576000         1
## 51              Jerami Grant  31.9 19.2 16.12       0         186000         1
## 52             Marvin Bagley 27.2 14.6 17.76       0        1020000         1
## 53            Isaiah Stewart  25.6  8.3 14.05       0         119000         1
## 54             Killian Hayes  25.0  6.9  9.35       0         221000         1
## 55               Steph Curry  34.5 25.5 21.47       8       46300000         1
## 56             Klay Thompson  29.4 20.4 16.81       5       13500000         1
## 57              Jordan Poole  30.0 18.5 16.20       0        1500000         1
## 58            Andrew Wiggins  31.9 17.2 15.04       1        2100000         1
## 59            Draymond Green  28.9  7.5 14.30       4        4000000         1
## 60               Otto Porter  22.1  8.2 15.94       0              0         0
## 61              Jalen Green  31.9 17.3 12.56       0        2200000         1
## 62             Kevin Porter  31.3 15.6 13.56       0         546000         1
## 63            Jae'Sean Tate  26.4 11.8 14.36       0              0         0
## 64            Christian Wood  30.8 17.9 19.18       0         200000         1
## 65              Eric Gordon  29.3 13.4 12.17       0         257000         1
## 66           Dennis Schroder 26.9 10.9 11.49       0        2100000         1
## 67           Malcom Brogdon  33.5 19.1 18.10       0         153000         1
## 68             Buddy Hield*  35.6 18.2 14.49       0         530000         1
## 69             Myles Turner  29.4 12.9 17.45       0         248000         1
## 70             Chris Duarte  28.0 13.1 12.31       0         338000         1
## 71               Jalen Smith 24.7 13.4 20.29       0          49900         1
## 72         Tyrese Haliburton 36.1 17.5 20.49       0         211000         1
## 73              Paul George  34.7 24.3 18.67       7        9700000         1
## 74            Reggie Jackson  31.2 16.8 12.19       0         189000         1
## 75         Marcus Morris Sr.  29.0 15.4 13.74       0         334000         1
## 76              Terance Mann  28.6 10.8 13.40       0         147000         1
## 77              Luke Kennard  27.4 11.9 13.31       0         208000         1
## 78              Eric Bledsoe  25.2  9.9 12.58       0         520000         1
## 79              LeBron James  37.2 30.3 26.25      18      133000000         1
## 80             Anthony Davis  35.1 23.2 23.97       8        7100000         1
## 81         Russell Westbrook  34.3 18.5 15.01       9       20600000         1
## 82                Malik Monk  28.1 13.8 14.49       0         554000         1
## 83          Carmelo Anothony  26.0 13.3 14.80      10        7900000         1
## 84       Talen Horton-Tucker  25.2 10.0 11.07       0         383000         1
## 85                  Ja Morant  33.1 27.4 24.53       1        7700000         1
## 86              Desmond Bane   29.8 18.2 17.62       0         161000         1
## 87             Dillon Brooks  27.7 18.4 15.55       0         140000         1
## 88             Jaren Jackson  27.3 16.3 17.09       0         372000         1
## 89              Steven Adams  26.3  6.9 17.60       0         518000         1
## 90         De'Anthony Melton  22.7 10.8 15.23       0          69900         1
## 91               Jimmy Butler  33.9 21.4 23.65       6        7500000         1
## 92                 Kyle Lowry  33.9 13.4 15.02       6        1500000         1
## 93                Tyler Herro  32.6 20.7 16.30       0        2300000         1
## 94                Bam Adebayo  32.6 19.1 21.91       1         844000         1
## 95                  PJ Tucker  27.9  7.6 11.35       0        1000000         1
## 96           Duncan Robinson  25.9 10.9 10.65       0         294000         1
## 97              Jrue Holiday  32.9 18.3 19.84       1         530000         1
## 98     Giannis Antetokounmpo  32.9 29.9 32.12       6       13500000         1
## 99            Khris Middleton  32.4 20.1 18.19       3         403000         1
## 100              Bobby Portis  28.2 14.6 17.79       0         277000         1
## 101            Grayson Allen  27.3 11.1 12.77       0         383000         1
## 102          Pat Connaughton  26.0  9.9 13.45       0         187000         1
## 103          Anthony Edwards  34.3 21.3 16.55       0        1200000         1
```

```
## 104       Karl-Anthony Towns  33.4 24.6 24.21       3        3800000         1
## 105         D'Angelo Russell  32.0 18.1 16.36       1        3600000         1
## 106          Jaden McDaniels  25.8  9.2 10.31       0          77900         1
## 107         Patrick Beverley  25.4  9.2 14.80       0         603000         1
## 108        Jarred Vanderbilt  25.4  6.9 15.35       0         114000         1
## 109           Brandon Ingram  34.0 22.7 18.78       1        2200000         1
## 110               CJ McCollum 33.8 24.3 22.01       0        1300000         1
## 111                 Josh Hart 33.5 13.4 15.19       0         663000         1
## 112        Jonas Valanciunas  30.3 17.8 21.30       0         263000         1
## 113            Herbert Jones  29.9  9.5 12.35       0          70900         1
## 114          Devonte' Graham  28.4 11.9 12.10       0         257000         1
## 115            Julius Randle  35.3 20.1 15.80       1         907000         1
## 116               RJ Barrett  34.5 20.0 13.72       0        1100000         1
## 117            Evan Fournier  29.5 14.1 12.34       0         301000         1
## 118               Alec Burks  28.6 11.7 13.72       0           8087         1
## 119        Mitchell Robinson  25.7  8.5 20.78       0         144000         1
## 120             Kemba Walker  25.6 11.6 13.96       4        1300000         1
## 121  Shai Gilgeous-Alexander  34.7 24.5 20.99       0        1100000         1
## 122            Luguentz Dort  32.6 17.2 12.31       0         176000         1
## 123              Josh Giddey  31.5 12.5 13.34       0         409000         1
## 124            Darius Bazley  27.9 10.8 12.62       0         112000         1
## 125            Aaron Wiggins  24.2  8.3 10.29       0          28600         1
## 126               Vit Krejci  23.0  6.2  8.52       0          20400         1
## 127             Cole Anthony  31.7 16.3 13.55       0         725000         1
## 128             Franz Wagner  30.7 15.2 14.75       0         102000         1
## 129           Wendell Carter  29.9 15.0 18.41       0         157000         1
## 130              Gary Harris  28.4 11.1 10.89       0         157000         1
## 131              Jalen Suggs  27.2 11.8  8.66       0         542000         1
## 132                 Mo Bamba  25.7 10.6 16.50       0         712000         1
## 133              James Harden 37.7 21.0 21.84      10       11600000         1
## 134             Tyrese Maxey  35.3 17.5 16.27       0         472000         1
## 135            Tobias Harris  34.8 17.2 16.00       0         528000         1
## 136              Joel Embiid  33.8 30.6 31.24       5        6000000         1
## 137          Matisse Thybulle  25.5  5.7 11.22       0         400000         1
## 138             Georges Niang  22.8  9.2 10.70       0         100000         1
## 139              Devin Booker  34.5 26.8 21.38       3        5400000         1
## 140            Mikal Bridges  34.8 14.2 14.49       0         228000         1
## 141               Chris Paul  32.9 14.7 20.86      12       11500000         1
## 142            Deandre Ayton  29.5 17.2 21.99       0         504000         1
## 143              Jae Crowder  28.1  9.4 11.33       0         518000         1
## 144           Cameron Johnson  26.1 12.5 15.26       0         220000         1
## 145            Damian Lillard  36.4 24.0 18.53       6        9600000         1
## 146              Norman Powell 33.3 18.7 15.32       0         321000         1
## 147              Drew Eubanks 29.5 14.5 19.92       0          20100         1
## 148           Anfernee Simons  29.5 17.3 15.34       0         212000         1
## 149              Jusuf Nurkic  28.2 15.0 20.10       0         420000         1
## 150            Justise Winslow 26.8 10.7 14.13       0         544000         1
## 151               DeAaron Fox  35.3 23.2 17.49       0        1200000         1
## 152          Domantas Sabonis  33.6 18.9 21.01       2         261000         1
## 153           Harrison Barnes  33.6 16.4 15.75       0         995000         1
## 154           Davion Mitchell  27.7 11.5 10.84       0         191000         1
## 155          Donte Divincenzo  26.6 10.3 13.02       0         106000         1
## 156             Justin Holiday 25.6  8.3  7.93       0         271000         1
## 157           Dejounte Murray  34.8 21.1 22.32       1        1100000         1
```

```
## 158           Keldon Johnson  31.9 17.0 15.26       0         145000         1
## 159             Jakob Poeltl  29.0 13.5 20.85       0          72800         1
## 160            Devin Vassell  27.3 12.3 13.39       0          55900         1
## 161          Josh Richardson 24.4 11.4 14.06       0         273000         1
## 162          Doug McDermott  24.0 11.3 11.47       0         255000         1
## 163           Pascal Siakam  37.9 22.8 20.31       1         677000         1
## 164           Fred VanVleet  37.9 20.3 17.38       1         716000         1
## 165              OG Anunoby  36.0 17.1 14.84       0         214000         1
## 166          Scottie Barnes  35.4 15.3 16.37       0         575000         1
## 167           Gary Trent Jr  35.0 18.3 14.71       0         281000         1
## 168         Precious Achiuwa  23.6  9.1 12.69       0         178000         1
## 169         Donovan Mitchell  33.8 25.9 21.64       3        3500000         1
## 170              Rudy Gobert  32.1 15.6 24.76       3         826000         1
## 171           Royce O'Neale  31.2  7.4 10.31       0         134000         1
## 172         Bojan Bogdanovic  30.9 18.1 15.71       0         119000         1
## 173              Mike Conley  28.6 13.7 17.28       1         570000         1
## 174          Jordan Clarkson  27.1 16.0 14.96       0        1700000         1
## 175             Bradley Beal  36.0 23.2 17.58       3        1300000         1
## 176               Kyle Kuzma  33.4 17.1 15.21       0        4900000         1
## 177 Kentavious Caldwell-Pope  30.2 13.2 12.60       0         462000         1
## 178              Deni Avdija  24.2  8.4 11.62       0         215000         1
## 179            Corey Kispert  23.4  8.2 10.96       0          71400         1
## 180        Kristaps Porzingis 28.2 22.1 27.79       1        1500000         1
##     Twitterfollowers Tiktok Tiktokmentions   Salary
## 1             447900      0      9.340e+07 14339285
## 2             627400      1      1.921e+08 26758928
## 3            1000000      0      6.939e+08 28103550
## 4              90700      0      1.420e+07  3661976
## 5              34800      0      4.700e+06 15178571
## 6             372900      0      4.610e+07 27000000
## 7            1000000      0      9.048e+08  8326471
## 8              34700      1      3.170e+07 23000000
## 9             293900      0      7.900e+06 18000000
## 10             14900      0      8.292e+05  7775400
## 11             44700      0      6.084e+05  4253357
## 12             95200      0      7.600e+06 18603448
## 13           4500000      1      1.800e+09 35328700
## 14          20500000      0      1.900e+09 42018900
## 15                 0      0      1.576e+05  5771889
## 16                 0      0      7.100e+06 17357143
## 17            383700      0      6.520e+07  8207518
## 18            422500      1      3.070e+07  5890000
## 19            208000      0      1.840e+08  5421493
## 20            186800      0      2.640e+07 17905263
## 21           1000000      1      2.500e+09  8231760
## 22            655400      0      3.170e+07 29925000
## 23            104100      0      3.880e+07  4215120
## 24            137800      1      3.782e+08 12000000
## 25            773000      0      1.963e+08 26000000
## 26            599400      0      3.149e+08 19500000
## 27           1300000      0      7.335e+08 18604651
## 28            172700      0      5.000e+06 24000000
## 29            383300      0      1.668e+08  8650651
## 30             68000      0      5.800e+06  5837760
```

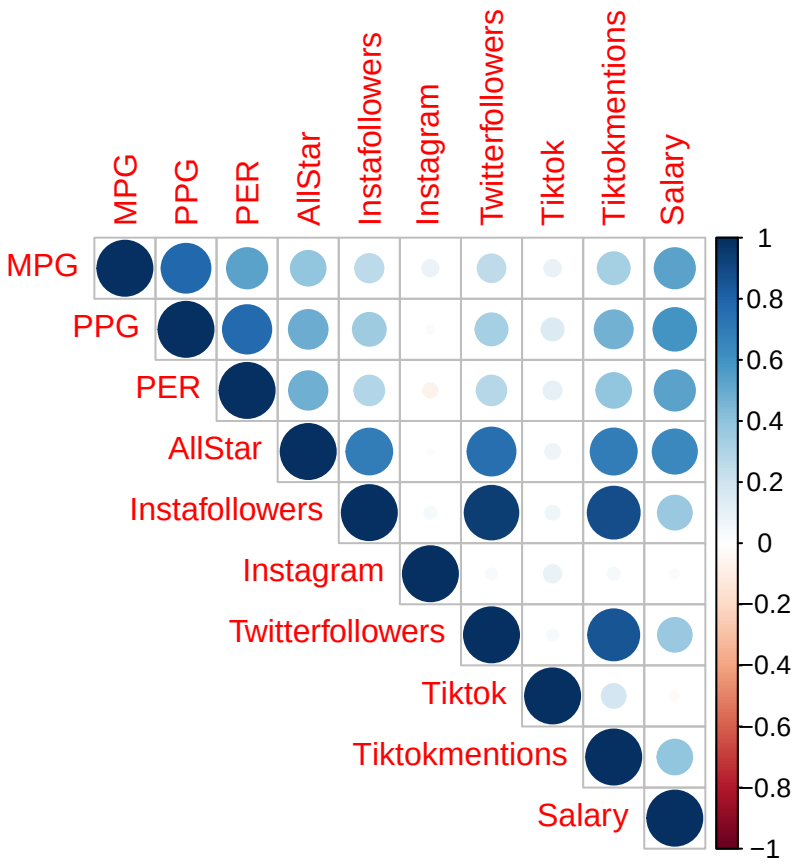
```
## 31             80200      1      3.800e+07  7040880
## 32             46600      1      1.990e+07  8075160
## 33             75400      0      2.010e+07 20000000
## 34            108100      0      7.600e+06 15690909
## 35             54100      0      4.600e+06 17500000
## 36             36500      1      5.200e+06  6720720
## 37           1700000      1      1.000e+09 10174391
## 38             20900      0      2.700e+06  4000000
## 39             80600      0      3.020e+07  1802057
## 40            138100      0      5.000e+06 21308816
## 41            122600      0      1.090e+07 17142857
## 42            111700      0      2.000e+06  9536000
## 43                 0      0      2.738e+08 31579390
## 44             46400      0      1.400e+06 15625000
## 45            208300      1      8.780e+07 16409091
## 46             23500      0      1.000e+06  8449074
## 47            154000      0      7.800e+06  4500000
## 48            288800      0      2.910e+07  2401537
## 49              9713      0      2.000e+06  2824320
## 50            102900      0      7.240e+07 10050120
## 51             53400      0      4.600e+06 20002500
## 52             96500      0      4.400e+06 11312114
## 53             19800      0      2.030e+07  3277080
## 54             16700      0      1.120e+07  5572680
## 55          17000000      1      2.600e+09 45780966
## 56           1800000      0      8.820e+08 37980720
## 57              1860      0      6.351e+08  2161440
## 58            590900      0      1.285e+08 31579390
## 59           2000000      0      6.100e+08 24026712
## 60              2624      0      1.670e+07  2389641
## 61            193800      1      3.556e+08  8992200
## 62             70800      0      2.660e+07  1782621
## 63             18400      0      1.100e+03  1517981
## 64             62800      0      1.900e+07 13666667
## 65            231900      0      5.400e+06 18218818
## 66                 0      1      2.660e+07  5890000
## 67             35600      0      4.100e+06 21700000
## 68            148800      0      2.870e+07 22768890
## 69            126900      0      8.900e+06 18000000
## 70             19500      1      1.360e+07  3749400
## 71             13600      0      1.100e+06  4458000
## 72             85300      0      2.470e+07  4023600
## 73           2400000      0      4.812e+08 39344900
## 74            121100      0      2.670e+07 10384500
## 75            158800      0      1.580e+07 15627907
## 76             27300      0      8.700e+06  1782621
## 77             92500      0      3.200e+06 13347727
## 78            233600      0      3.700e+06 18125000
## 79          52300000      0      5.800e+09 41180544
## 80           2200000      0      5.408e+08 35361360
## 81           6900000      0      9.743e+08 44211146
## 82            165800      0      2.540e+07  1789256
## 83           9200000      1      2.157e+08  2641691
## 84             80300      0      1.890e+07  9500000
```

```
## 85           2400000      1      2.100e+09  9603360
## 86             57900      0      9.500e+06  2033160
## 87             30600      0      1.970e+07 12200000
## 88            218300      0      1.940e+07  9180560
## 89            216800      0      1.379e+08 17073171
## 90             24900      0      7.908e+05  8805976
## 91            871600      1      4.472e+08 36016200
## 92            923100      0      1.027e+08 26894128
## 93            355100      0      8.360e+07  4004280
## 94            226500      0      8.100e+07 28103550
## 95                 0      0      5.650e+07  7000000
## 96             49300      0      3.400e+07 15650000
## 97            196000      0      5.080e+07 32413333
## 98           2600000      1      8.511e+08 39344970
## 99            115600      0      2.910e+07 35500000
## 100           172300      0      2.720e+07  4347600
## 101           257100      0      1.870e+07  4054695
## 102            87600      0      2.600e+06  5333334
## 103           183100      1      2.371e+08 10245480
## 104           719200      1      9.850e+07 31650600
## 105           660900      0      6.000e+07 30013500
## 106            12600      0      3.500e+06  2063280
## 107           395100      0      1.102e+08 14320988
## 108            63000      0      8.702e+06  4050000
## 109           340200      0      5.010e+07 29467800
## 110           625100      0      2.860e+07 30864198
## 111           550100      1      7.440e+07 12000000
## 112           176200      0      5.500e+06 14000000
## 113            17400      0      2.469e+05  1700000
## 114            33800      0      9.600e+06 11000000
## 115           473000      0      4.380e+07 21780000
## 116           218700      0      4.680e+07  8623920
## 117           360200      0      1.020e+07 17000000
## 118            53800      0      4.801e+05  9536000
## 119            61700      0      5.700e+06  1802057
## 120           458200      0      1.070e+08  8729020
## 121           131100      1      3.130e+07  5495532
## 122            35600      0      2.900e+06  1782621
## 123            92000      1      9.500e+07  5988000
## 124            23600      0      1.120e+07  2513040
## 125             6801      0      1.914e+05 31579390
## 126             3045      0      1.676e+05   925258
## 127            87000      1      3.010e+07  3449400
## 128            11900      0      5.300e+06  5007840
## 129            53400      1      1.100e+06  6920027
## 130            64400      0      6.300e+06 20482143
## 131            45600      0      4.930e+07  6592920
## 132            43700      0      2.763e+08  7568743
## 133          7700000      1      1.400e+09 44310840
## 134           133200      1      3.230e+07  2602920
## 135           270200      0      1.440e+07 35995950
## 136          2100000      0      3.536e+08 31579390
## 137            97200      1      1.410e+07  2840160
## 138            91700      1      8.919e+05  3300000
```

```
## 139          1200000      1      1.100e+09 31650600
## 140            63100      0      1.740e+07  5557725
## 141          8500000      0      4.664e+08 30000000
## 142           162200      1      4.140e+07 12632950
## 143           213800      0      1.480e+07  9720900
## 144                0      0      1.200e+06  4437000
## 145          3100000      0      3.450e+08 39344900
## 146            78200      1      3.400e+06 15517241
## 147             5477      0      1.650e+05  2239820
## 148            38600      0      7.000e+06  3938818
## 149           145500      0      1.440e+07 12000000
## 150           119200      0      2.253e+05  3902439
## 151           291900      0      3.580e+07 28103550
## 152            49300      0      8.000e+06 19800000
## 153           590100      0      4.100e+06 20284091
## 154            22200      1      9.900e+06  4603320
## 155            16700      0      4.100e+06  4675830
## 156            30200      1      1.900e+06  6006420
## 157           225400      0      7.930e+07 15428880
## 158                0      0      1.100e+07  2145720
## 159             1774      0      1.300e+06  8750000
## 160            17000      0      8.646e+05  4235160
## 161                0      0      1.700e+06 11615328
## 162                0      0      8.536e+05 13750000
## 163           158900      0      3.330e+07 33003936
## 164           196700      0      2.870e+07 19675926
## 165                0      0      9.300e+06 16071429
## 166            61000      1      6.840e+07  7280400
## 167            79500      0      7.000e+06 16000000
## 168            32600      0      3.300e+06  2711280
## 169          1300000      0      1.680e+08 28103550
## 170           606100      0      1.349e+08 35344828
## 171            52300      0      8.446e+05  8800000
## 172            26100      0      2.400e+06 18700000
## 173           537700      0      6.400e+06 21000000
## 174           508600      1      3.062e+08 12420000
## 175           687200      0      1.012e+08 33724200
## 176          1200000      0      1.223e+08 13000000
## 177           109600      0      3.000e+06 13038862
## 178                0      1      1.790e+07  4692840
## 179            11900      1      1.100e+06  3383640
## 180           370500      1      2.480e+07 31650600
```

```
data <- read.csv('/R Files/PPS/Performance.csv')
data1 = subset(data, select = c(2,3,4,5,6,7,8,9,10,11))
```

```
correlation = cor(data1)
corrplot(correlation, type = "upper")
```




```
mod_performance = lm(Salary ~ MPG + PPG + PER + AllStar, data = data1)
summary(mod_performance)
```

```
##
## Call:
## lm(formula = Salary ~ MPG + PPG + PER + AllStar, data = data1)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -25675628  -4917316   -480113   5849051  26113040
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) -12603112    6483277  -1.944   0.0535 .
## MPG            530580     258594   2.052   0.0417 *
## PPG            327201     227929   1.436   0.1529
## PER            244281     209238   1.167   0.2446
## AllStar       1915821     262416   7.301 9.65e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7997000 on 175 degrees of freedom
## Multiple R-squared:  0.5294, Adjusted R-squared:  0.5187
## F-statistic: 49.22 on 4 and 175 DF,  p-value: < 2.2e-16
```

```
vif(mod_performance)
```

```
##      MPG      PPG      PER  AllStar
## 2.718814 4.831639 2.643038 1.377024
```

```
step(mod_performance, direction="both")
```

```
## Start:  AIC=5726.99
## Salary ~ MPG + PPG + PER + AllStar
##
##           Df  Sum of Sq        RSS    AIC
## - PER      1 8.7175e+13 1.1280e+16 5726.4
## <none>                  1.1193e+16 5727.0
## - PPG      1 1.3180e+14 1.1324e+16 5727.1
## - MPG      1 2.6925e+14 1.1462e+16 5729.3
## - AllStar  1 3.4090e+15 1.4602e+16 5772.9
##
## Step:  AIC=5726.39
## Salary ~ MPG + PPG + AllStar
##
##           Df  Sum of Sq        RSS    AIC
## <none>                  1.1280e+16 5726.4
## + PER      1 8.7175e+13 1.1193e+16 5727.0
## - MPG      1 2.2300e+14 1.1503e+16 5727.9
## - PPG      1 4.9636e+14 1.1776e+16 5732.1
## - AllStar  1 3.7704e+15 1.5050e+16 5776.3
```

```
##
## Call:
## lm(formula = Salary ~ MPG + PPG + AllStar, data = data1)
##
## Coefficients:
## (Intercept)          MPG          PPG      AllStar
##    -9623320       474443       494254      1975815
```

```
mod_performance1 = lm(Salary ~ MPG + PPG + AllStar, data = data1)
summary(mod_performance1)
```

```
##
## Call:
## lm(formula = Salary ~ MPG + PPG + AllStar, data = data1)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -26402228  -5059677   -240585   5872822  25618885
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) -9623320    5965885  -1.613  0.10852
## MPG           474443     254346   1.865  0.06380 .
## PPG           494254     177601   2.783  0.00598 **
```

```
## AllStar      1975815     257601   7.670 1.12e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 8006000 on 176 degrees of freedom
## Multiple R-squared:  0.5257, Adjusted R-squared:  0.5177
## F-statistic: 65.04 on 3 and 176 DF,  p-value: < 2.2e-16
```

```
vif(mod_performance1)
```

```
##      MPG      PPG  AllStar
## 2.624810 2.927472 1.324219
```

```
mod_popularity = lm(Salary ~ Instafollowers + Instagram + Twitterfollowers + Tiktok + Tiktokmentions, da
summary(mod_popularity)
```

```
##
## Call:
## lm(formula = Salary ~ Instafollowers + Instagram + Twitterfollowers +
##     Tiktok + Tiktokmentions, data = data1)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -22961668  -8508036  -2445819   6326560  22471864
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)       1.292e+07  4.349e+06   2.970   0.0034 **
## Instafollowers    5.902e-03  2.576e-01   0.023   0.9817
## Instagram         9.577e+05  4.447e+06   0.215   0.8297
## Twitterfollowers  2.097e-01  5.574e-01   0.376   0.7073
## Tiktok           -2.625e+06  2.017e+06  -1.301   0.1948
## Tiktokmentions    6.641e-03  3.100e-03   2.142   0.0335 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10650000 on 174 degrees of freedom
## Multiple R-squared:  0.1707, Adjusted R-squared:  0.1468
## F-statistic: 7.162 on 5 and 174 DF,  p-value: 4.052e-06
```

```
vif(mod_popularity)
```

```
##   Instafollowers        Instagram Twitterfollowers           Tiktok
##        12.361980         1.011873         9.904102         1.116178
##   Tiktokmentions
##         5.274117
```

```
step(mod_popularity, direction = "both")
```

```
## Start:  AIC=5830.98
## Salary ~ Instafollowers + Instagram + Twitterfollowers + Tiktok +
```

```
##     Tiktokmentions
##
##                     Df  Sum of Sq        RSS    AIC
## - Instafollowers     1 5.9490e+10 1.9725e+16 5829.0
## - Instagram          1 5.2572e+12 1.9730e+16 5829.0
## - Twitterfollowers   1 1.6040e+13 1.9741e+16 5829.1
## - Tiktok             1 1.9201e+14 1.9917e+16 5830.7
## <none>                            1.9725e+16 5831.0
## - Tiktokmentions     1 5.2034e+14 2.0245e+16 5833.7
##
## Step:  AIC=5828.99
## Salary ~ Instagram + Twitterfollowers + Tiktok + Tiktokmentions
##
##                     Df  Sum of Sq        RSS    AIC
## - Instagram          1 5.2890e+12 1.9730e+16 5827.0
## - Twitterfollowers   1 4.3311e+13 1.9768e+16 5827.4
## - Tiktok             1 1.9336e+14 1.9918e+16 5828.7
## <none>                            1.9725e+16 5829.0
## + Instafollowers     1 5.9490e+10 1.9725e+16 5831.0
## - Tiktokmentions     1 6.6626e+14 2.0391e+16 5833.0
##
## Step:  AIC=5827.03
## Salary ~ Twitterfollowers + Tiktok + Tiktokmentions
##
##                     Df  Sum of Sq        RSS    AIC
## - Twitterfollowers   1 4.3941e+13 1.9774e+16 5825.4
## - Tiktok             1 1.8906e+14 1.9919e+16 5826.8
## <none>                            1.9730e+16 5827.0
## + Instagram          1 5.2890e+12 1.9725e+16 5829.0
## + Instafollowers     1 9.1261e+10 1.9730e+16 5829.0
## - Tiktokmentions     1 6.6592e+14 2.0396e+16 5831.0
##
## Step:  AIC=5825.43
## Salary ~ Tiktok + Tiktokmentions
##
##                     Df  Sum of Sq        RSS    AIC
## <none>                            1.9774e+16 5825.4
## - Tiktok             1 2.5045e+14 2.0024e+16 5825.7
## + Twitterfollowers   1 4.3941e+13 1.9730e+16 5827.0
## + Instafollowers     1 2.8114e+13 1.9746e+16 5827.2
## + Instagram          1 5.9185e+12 1.9768e+16 5827.4
## - Tiktokmentions     1 3.9939e+15 2.3768e+16 5856.5


##
## Call:
## lm(formula = Salary ~ Tiktok + Tiktokmentions, data = data1)
##
## Coefficients:
##    (Intercept)          Tiktok  Tiktokmentions
##      1.383e+07      -2.889e+06       8.156e-03
```

```
mod_popularity1 = lm(Salary ~ Tiktok + Tiktokmentions, data = data1)
summary(mod_popularity1)
```

```
##
## Call:
## lm(formula = Salary ~ Tiktok + Tiktokmentions, data = data1)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -23096348  -8534542  -2386863   6469970  22705206
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)     1.383e+07  9.138e+05  15.129  < 2e-16 ***
## Tiktok         -2.889e+06  1.929e+06  -1.497    0.136
## Tiktokmentions  8.156e-03  1.364e-03   5.979 1.21e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10570000 on 177 degrees of freedom
## Multiple R-squared:  0.1686, Adjusted R-squared:  0.1592
## F-statistic: 17.95 on 2 and 177 DF,  p-value: 8e-08
```

```
vif(mod_popularity1)
```

```
##         Tiktok Tiktokmentions
##       1.036635       1.036635
```

```
mod_combined = lm(Salary ~ MPG + PPG + AllStar + Instafollowers + Instagram + Twitterfollowers + Tiktok
summary(mod_combined)
```

```
##
## Call:
## lm(formula = Salary ~ MPG + PPG + AllStar + Instafollowers +
##     Instagram + Twitterfollowers + Tiktok + Tiktokmentions, data = data1)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -23856410  -4867400   -204601   4965092  25115109
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -8.616e+06  6.242e+06  -1.380  0.16934
## MPG               3.754e+05  2.477e+05   1.516  0.13148
## PPG               5.644e+05  1.805e+05   3.127  0.00208 **
## AllStar           2.927e+06  3.663e+05   7.991  1.9e-13 ***
## Instafollowers    4.384e-01  1.907e-01   2.299  0.02274 *
## Instagram         1.308e+06  3.237e+06   0.404  0.68661
## Twitterfollowers -1.351e+00  4.555e-01  -2.967  0.00344 **
## Tiktok           -3.137e+06  1.459e+06  -2.150  0.03297 *
## Tiktokmentions   -2.881e-03  2.406e-03  -1.197  0.23287
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7689000 on 171 degrees of freedom
## Multiple R-squared:  0.5749, Adjusted R-squared:  0.555
## F-statistic: 28.91 on 8 and 171 DF,  p-value: < 2.2e-16
```

```
step(mod_combined,direction = "both")
```

```
## Start:  AIC=5716.7
## Salary ~ MPG + PPG + AllStar + Instafollowers + Instagram + Twitterfollowers +
##     Tiktok + Tiktokmentions
##
##                     Df  Sum of Sq        RSS    AIC
## - Instagram          1 9.6575e+12 1.0120e+16 5714.9
## - Tiktokmentions     1 8.4754e+13 1.0196e+16 5716.2
## <none>                            1.0111e+16 5716.7
## - MPG                1 1.3581e+14 1.0247e+16 5717.1
## - Tiktok             1 2.7328e+14 1.0384e+16 5719.5
## - Instafollowers     1 3.1239e+14 1.0423e+16 5720.2
## - Twitterfollowers   1 5.2046e+14 1.0631e+16 5723.7
## - PPG                1 5.7805e+14 1.0689e+16 5724.7
## - AllStar            1 3.7755e+15 1.3886e+16 5771.8
##
## Step:  AIC=5714.87
## Salary ~ MPG + PPG + AllStar + Instafollowers + Twitterfollowers +
##     Tiktok + Tiktokmentions
##
##                     Df  Sum of Sq        RSS    AIC
## - Tiktokmentions     1 8.4695e+13 1.0205e+16 5714.4
## <none>                            1.0120e+16 5714.9
## - MPG                1 1.4673e+14 1.0267e+16 5715.5
## + Instagram          1 9.6575e+12 1.0111e+16 5716.7
## - Tiktok             1 2.6574e+14 1.0386e+16 5717.5
## - Instafollowers     1 3.1401e+14 1.0434e+16 5718.4
## - Twitterfollowers   1 5.1913e+14 1.0640e+16 5721.9
## - PPG                1 5.6973e+14 1.0690e+16 5722.7
## - AllStar            1 3.7664e+15 1.3887e+16 5769.8
##
## Step:  AIC=5714.37
## Salary ~ MPG + PPG + AllStar + Instafollowers + Twitterfollowers +
##     Tiktok
##
##                     Df  Sum of Sq        RSS    AIC
## <none>                            1.0205e+16 5714.4
## + Tiktokmentions     1 8.4695e+13 1.0120e+16 5714.9
## - MPG                1 1.6781e+14 1.0373e+16 5715.3
## + Instagram          1 9.5989e+12 1.0196e+16 5716.2
## - Instafollowers     1 2.3069e+14 1.0436e+16 5716.4
## - Tiktok             1 3.7395e+14 1.0579e+16 5718.8
## - PPG                1 4.9444e+14 1.0700e+16 5720.9
## - Twitterfollowers   1 5.5763e+14 1.0763e+16 5721.9
## - AllStar            1 3.6937e+15 1.3899e+16 5768.0

##
## Call:
## lm(formula = Salary ~ MPG + PPG + AllStar + Instafollowers +
##     Twitterfollowers + Tiktok, data = data1)
##
## Coefficients:
```

```
##      (Intercept)               MPG               PPG           AllStar
##       -7.625e+06         4.127e+05         5.021e+05         2.880e+06
##   Instafollowers  Twitterfollowers            Tiktok
##        3.344e-01        -1.394e+00        -3.527e+06
```

```
mod_combined1 = lm(formula = Salary ~ MPG + PPG + AllStar + Instafollowers + Twitterfollowers + Tiktok,
summary(mod_combined1)
```

```
##
## Call:
## lm(formula = Salary ~ MPG + PPG + AllStar + Instafollowers +
##     Twitterfollowers + Tiktok, data = data1)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -22230797  -4859230   -188134   5207357  25048218
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -7.625e+06  5.744e+06  -1.327  0.18614
## MPG               4.127e+05  2.447e+05   1.687  0.09347 .
## PPG               5.021e+05  1.734e+05   2.895  0.00428 **
## AllStar           2.880e+06  3.640e+05   7.913 2.88e-13 ***
## Instafollowers    3.344e-01  1.691e-01   1.978  0.04957 *
## Twitterfollowers -1.394e+00  4.534e-01  -3.075  0.00245 **
## Tiktok           -3.527e+06  1.401e+06  -2.518  0.01272 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7680000 on 173 degrees of freedom
## Multiple R-squared:  0.5709, Adjusted R-squared:  0.556
## F-statistic: 38.37 on 6 and 173 DF,  p-value: < 2.2e-16
```

```
vif(mod_combined1)
```

```
##              MPG              PPG          AllStar   Instafollowers
##         2.639735         3.033342         2.871877        10.232132
## Twitterfollowers           Tiktok
##        12.593616         1.035028
```

```
mod_combined2 = lm(formula = Salary ~ MPG + PPG + AllStar + Twitterfollowers + Tiktok, data = data1)
summary(mod_combined2)
```

```
##
## Call:
## lm(formula = Salary ~ MPG + PPG + AllStar + Twitterfollowers +
##     Tiktok, data = data1)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -25979536  -4754957   -266579   5630033  25135863
##
```

```
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -7.943e+06  5.790e+06  -1.372  0.17188
## MPG               4.075e+05  2.467e+05   1.652  0.10040
## PPG               5.456e+05  1.735e+05   3.145  0.00195 **
## AllStar           2.744e+06  3.604e+05   7.614 1.62e-12 ***
## Twitterfollowers -5.859e-01  1.980e-01  -2.959  0.00352 **
## Tiktok           -3.338e+06  1.409e+06  -2.368  0.01896 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7744000 on 174 degrees of freedom
## Multiple R-squared:  0.5612, Adjusted R-squared:  0.5486
## F-statistic: 44.51 on 5 and 174 DF,  p-value: < 2.2e-16
```

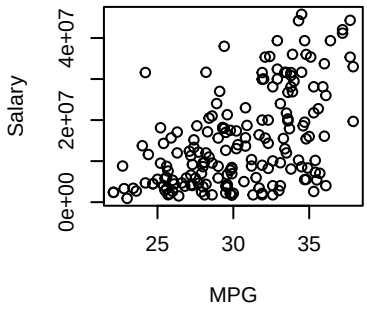
```
vif(mod_combined2)
```

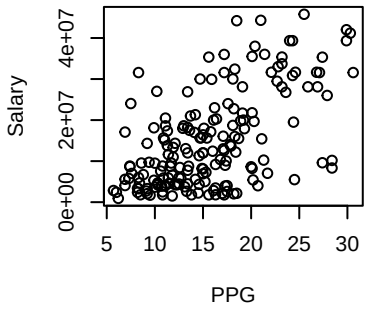
```
##              MPG              PPG          AllStar Twitterfollowers
##         2.639428         2.984654         2.769434         2.362108
##           Tiktok
##         1.030192
```

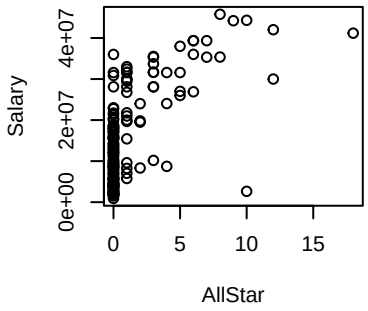
```
anova(mod_performance1, mod_combined2)
```

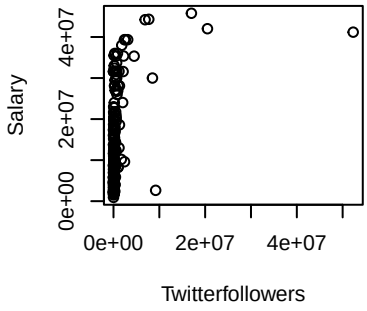
```
## Analysis of Variance Table
##
## Model 1: Salary ~ MPG + PPG + AllStar
## Model 2: Salary ~ MPG + PPG + AllStar + Twitterfollowers + Tiktok
##   Res.Df        RSS Df  Sum of Sq     F   Pr(>F)
## 1    176 1.1280e+16
## 2    174 1.0436e+16  2 8.4398e+14 7.036 0.001152 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

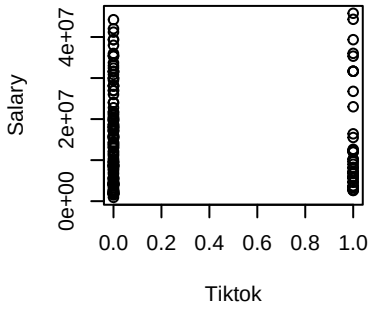
```
par(mfrow=c(2,3))
plot(formula = Salary ~ MPG + PPG + AllStar + Twitterfollowers + Tiktok, data = data1)
plot(mod_combined2)
```

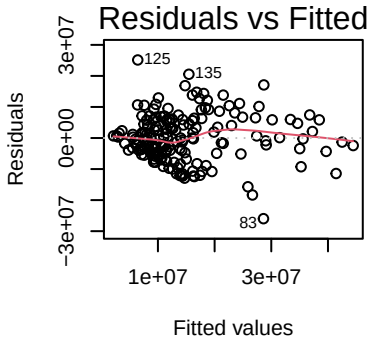

Salary
0e+00
2e+07
4e+07
25
30
35
MPG

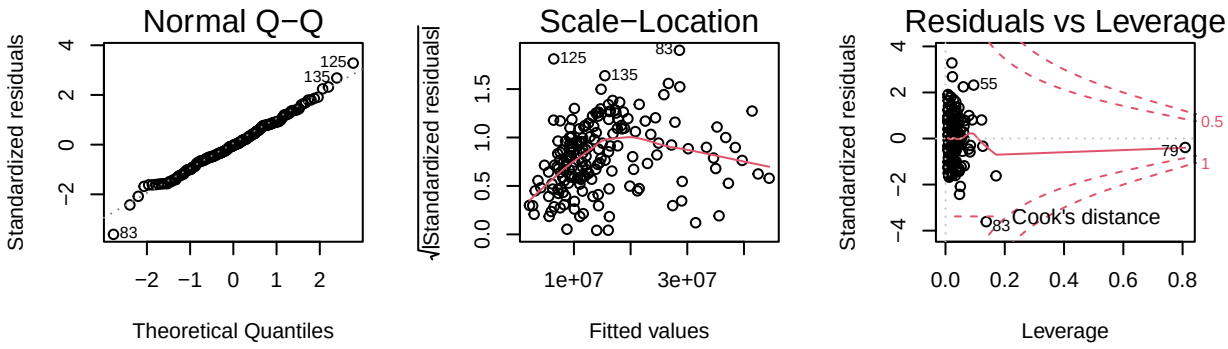

Salary
0e+00
2e+07
4e+07
5
10
15
20
25
30
PPG


Salary
0e+00
2e+07
4e+07
0
5
10
15
AllStar


Salary
0e+00
2e+07
4e+07
0e+00
2e+07
4e+07
Twitterfollowers


Salary
0e+00
2e+07
4e+07
0.0
0.2
0.4
0.6
0.8
1.0
Tiktok


Residuals vs Fitted
Residuals
−3e+07
0e+00
3e+07
125
135
83
1e+07
3e+07
Fitted values


Normal Q−Q
Standardized residuals
Theoretical Quantiles
125
135
83
Scale−Location
√|Standardized residuals|
Fitted values
1e+07
3e+07
Residuals vs Leverage
Standardized residuals
Leverage
Cook's distance
55
79
0.5
1