

```
> library(readxl)
> DATA <- read_excel("C:\\Users\\hp\\OneDrive\\Escritorio\\SDATA.xlsx")
```

```
> DATA
```

```
# A tibble: 40 x 6
```

	Team	Season	AvgAttendance	Population	Peformance	AvgMarketValue
	<chr>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>
1	CR	201819	15.3	727211	0.235	692000
2	FCD	201819	15.5	1343573	0.471	535000
3	HD	201819	16.9	2320268	0.294	443000
4	LAG	201819	24.4	3979576	0.382	1270000
5	LAFC	201819	22.0	3979576	0.471	1140000
6	MUFC	201819	23.9	308096	0.324	693000
7	PT	201819	21.1	654741	0.441	820000
8	RSL	201819	18.6	200567	0.412	517000
9	SJE	201819	19.0	1021795	0.118	581000
10	SSFC	201819	40.6	753675	0.529	792000

```
# ... with 30 more rows
```

```
> summary(DATA)
```

	Team	Season	AvgAttendance	Population
Length:	40	Min. :201819	Min. :12.32	Min. : 152960
Class :	character	1st Qu.:201819	1st Qu.:16.68	1st Qu.: 617758
Mode :	character	Median :201870	Median :18.60	Median : 826114
		Mean :201870	Mean :21.51	Mean :1974243
		3rd Qu.:201920	3rd Qu.:22.87	3rd Qu.:2413695
		Max. :201920	Max. :53.00	Max. :8336817
	Peformance	AvgMarketValue		
Min. :	0.1180	Min. : 443000		
1st Qu.:	0.3240	1st Qu.: 580750		
Median :	0.4120	Median : 754000		
Mean :	0.4059	Mean : 795325		

3rd Qu.:0.4710 3rd Qu.: 866250

Max. :0.6470 Max. :1640000

```
> sapply(DATA[,3:6], sd)
```

AvgAttendance	Population	Peformance	AvgMarketValue
9.301674e+00	2.423546e+06	1.136848e-01	2.701826e+05

```
> model=lm(AvgAttendance~Population + Peformance + AvgMarketValue,data=DATA)
```

```
> model
```

Call:

```
lm(formula = AvgAttendance ~ Population + Peformance + AvgMarketValue,  
    data = DATA)
```

Coefficients:

(Intercept)	Population	Peformance	AvgMarketValue
-1.603e+00	-1.119e-06	3.795e+01	1.247e-05

```
> summary(model)
```

Call:

```
lm(formula = AvgAttendance ~ Population + Peformance + AvgMarketValue,  
    data = DATA)
```

Residuals:

Min	1Q	Median	3Q	Max
-9.202	-4.692	-1.705	4.393	20.905

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-1.603e+00	5.202e+00	-0.308	0.75970

```
Population      -1.119e-06  5.260e-07  -2.128  0.04029 *
Performance     3.795e+01  1.147e+01   3.310  0.00213 **
AvgMarketValue  1.247e-05  4.567e-06   2.731  0.00972 **
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Residual standard error: 7.507 on 36 degrees of freedom

Multiple R-squared: 0.3988, Adjusted R-squared: 0.3487

F-statistic: 7.96 on 3 and 36 DF, p-value: 0.0003374

```
> library(corrplot)
```

```
corrplot 0.84 loaded
```

```
> DATA1 <- subset (DATA, select = - Team)
```

```
> DATA2 <- subset (DATA1, select = -Season)
```

```
> DATA2
```

```
# A tibble: 40 x 4
```

	AvgAttendance	Population	Peformance	AvgMarketValue
	<dbl>	<dbl>	<dbl>	<dbl>
1	15.3	727211	0.235	692000
2	15.5	1343573	0.471	535000
3	16.9	2320268	0.294	443000
4	24.4	3979576	0.382	1270000
5	22.0	3979576	0.471	1140000
6	23.9	308096	0.324	693000
7	21.1	654741	0.441	820000
8	18.6	200567	0.412	517000
9	19.0	1021795	0.118	581000
10	40.6	753675	0.529	792000

```
# ... with 30 more rows
```

```
> mydata.cor = cor(DATA2, method = c("spearman"))
> corrplot(mydata.cor)
> mydata.cor
```

	AvgAttendance	Population	Performance	AvgMarketValue
AvgAttendance	1.0000000	-0.2019550	0.4320387	0.4458413
Population	-0.2019550	1.0000000	0.1626341	0.1013016
Performance	0.4320387	0.1626341	1.0000000	0.2296263
AvgMarketValue	0.4458413	0.1013016	0.2296263	1.0000000

```
> library(lmtest)
```

```
Loading required package: zoo
```

```
Attaching package: 'zoo'
```

```
The following objects are masked from 'package:base':
```

```
as.Date, as.Date.numeric
```

```
> bptest(model, ~ Population*Performance + Population*AvgMarketValue +
Performance*AvgMarketValue + I(AvgMarketValue^2) + I(Performance^2) +
I(Population^2), data = DATA)
```

```
studentized Breusch-Pagan test
```

```
data: model
```

```
BP = 27.335, df = 9, p-value = 0.001231
```