Math564_Pilot

Chenjie Li

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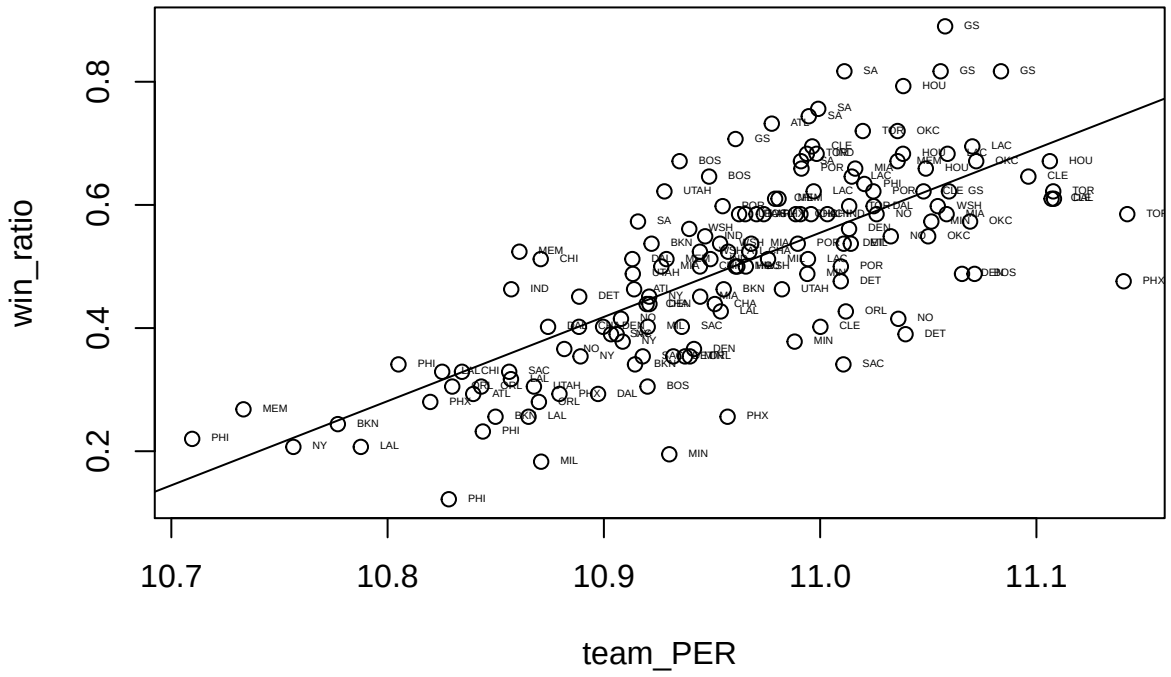
```
raw <- read.csv('/home/chenjie/Desktop/Math564Project/12_players.csv')
```

```
md_total <-lm(raw$win_ratio~ raw$team_PER,data = raw)
summary(md_total)
```

```
##
## Call:
## lm(formula = raw$win_ratio ~ raw$team_PER, data = raw)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.270693 -0.063409 -0.004573  0.067140  0.256176
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -14.4855     1.1537  -12.56   <2e-16 ***
## raw$team_PER   1.3673     0.1053   12.99   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1054 on 148 degrees of freedom
## Multiple R-squared:  0.5327, Adjusted R-squared:  0.5296
## F-statistic: 168.7 on 1 and 148 DF,  p-value: < 2.2e-16
```

```
plot(raw$team_PER,raw$win_ratio,xlab = 'team_PER', ylab = 'win_ratio', main = '2014 - 2017 Win_Ratio ag
```

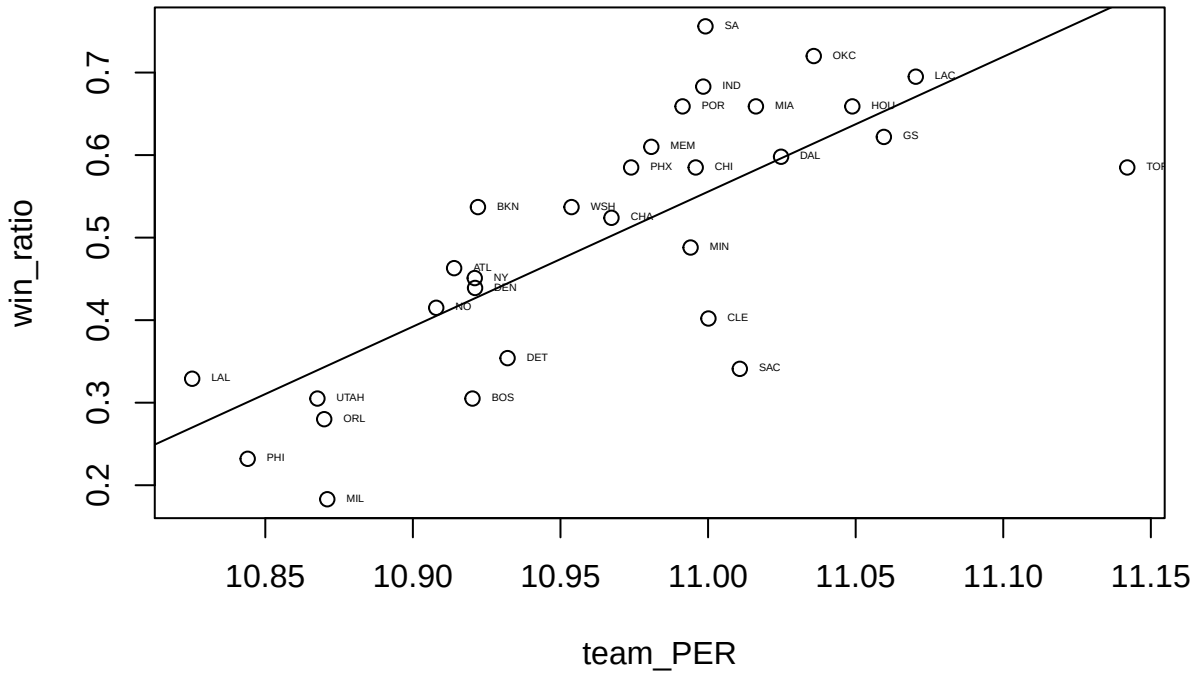



```
## integer(0)
```

```
data14<- raw[raw$season ==2014,]
md14 <-lm(data14$win_ratio~ data14$team_PER,data = data14)
summary(md14)
```

```
##
## Call:
## lm(formula = data14$win_ratio ~ data14$team_PER, data = data14)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.23226 -0.06181  0.02264  0.06871  0.20177
##
## Coefficients:
##                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -17.4275     2.9253  -5.957 2.05e-06 ***
## data14$team_PER   1.6348     0.2668   6.129 1.30e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1048 on 28 degrees of freedom
## Multiple R-squared:  0.5729, Adjusted R-squared:  0.5577
## F-statistic: 37.56 on 1 and 28 DF,  p-value: 1.296e-06
```

```
plot(data14$team_PER,data14$win_ratio,xlab = 'team_PER', ylab = 'win_ratio', main = '2014 Win_Ratio aga
```

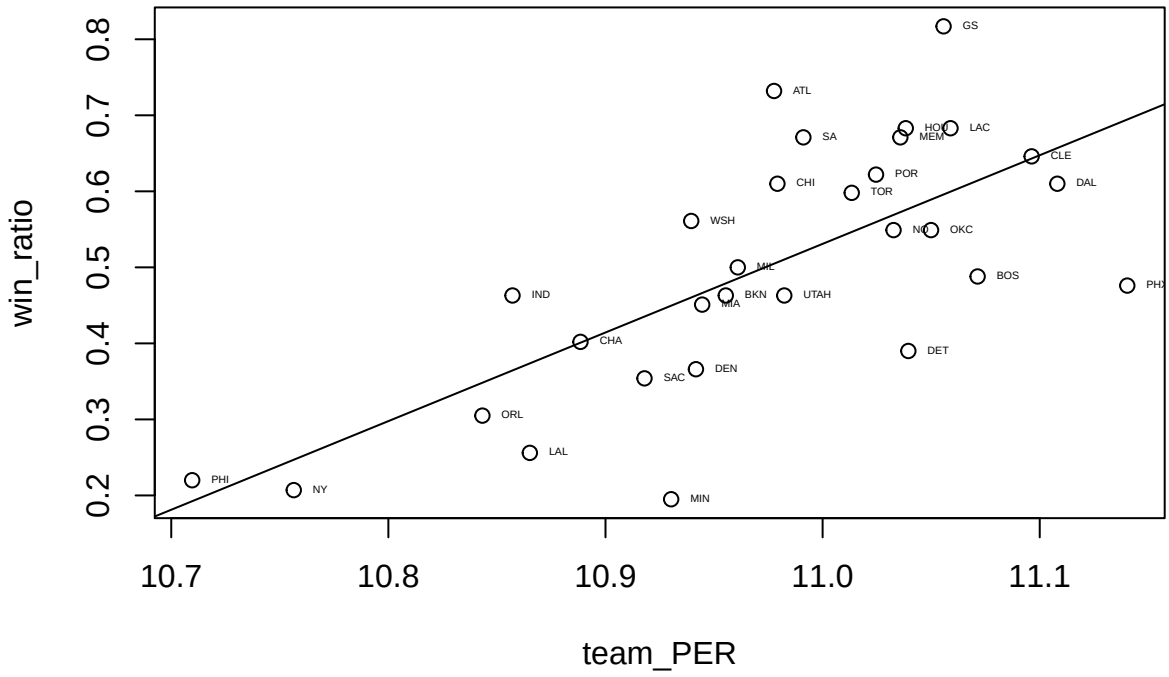



```
## integer(0)
```

```
data15<- raw[raw$season ==2015,]
md15 <-lm(data15$win_ratio~ data15$team_PER,data = data15)
summary(md15)
```

```
##
## Call:
## lm(formula = data15$win_ratio ~ data15$team_PER, data = data15)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.254587 -0.047212 -0.007068  0.094628  0.227164
##
## Coefficients:
##                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -12.2921     2.4323  -5.054 2.39e-05 ***
## data15$team_PER   1.1657     0.2216   5.259 1.36e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1185 on 28 degrees of freedom
## Multiple R-squared:  0.497,  Adjusted R-squared:  0.479
## F-statistic: 27.66 on 1 and 28 DF,  p-value: 1.365e-05
```

```
plot(data15$team_PER,data15$win_ratio,xlab = 'team_PER', ylab = 'win_ratio', main = '2015 Win_Ratio aga
```

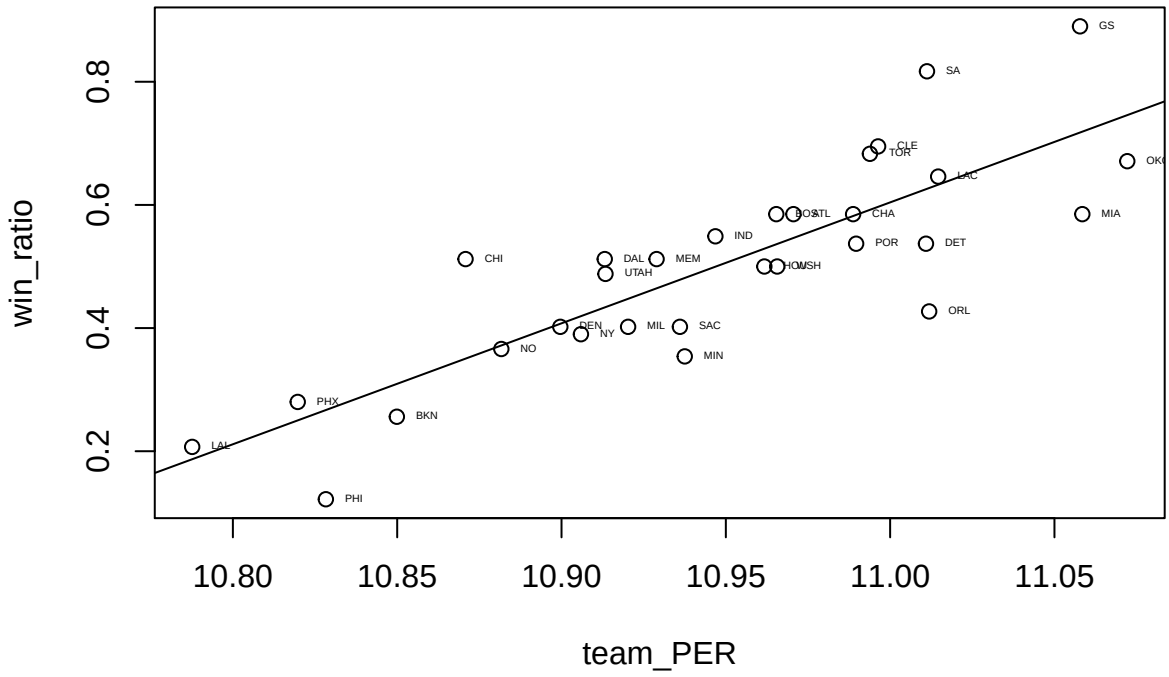



```
## integer(0)
```

```
data16<- raw[raw$season ==2016,]
md16 <-lm(data16$win_ratio~ data16$team_PER,data = data16)
summary(md16)
```

```
##
## Call:
## lm(formula = data16$win_ratio ~ data16$team_PER, data = data16)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.200417 -0.051639 -0.000967  0.049245  0.190884
##
## Coefficients:
##                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -21.0017     2.6959  -7.790 1.74e-08 ***
## data16$team_PER   1.9642     0.2463   7.976 1.10e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09527 on 28 degrees of freedom
## Multiple R-squared:  0.6944, Adjusted R-squared:  0.6835
## F-statistic: 63.61 on 1 and 28 DF,  p-value: 1.097e-08
```

```
plot(data16$team_PER,data16$win_ratio,xlab = 'team_PER', ylab = 'win_ratio', main = '2016 Win_Ratio aga
```

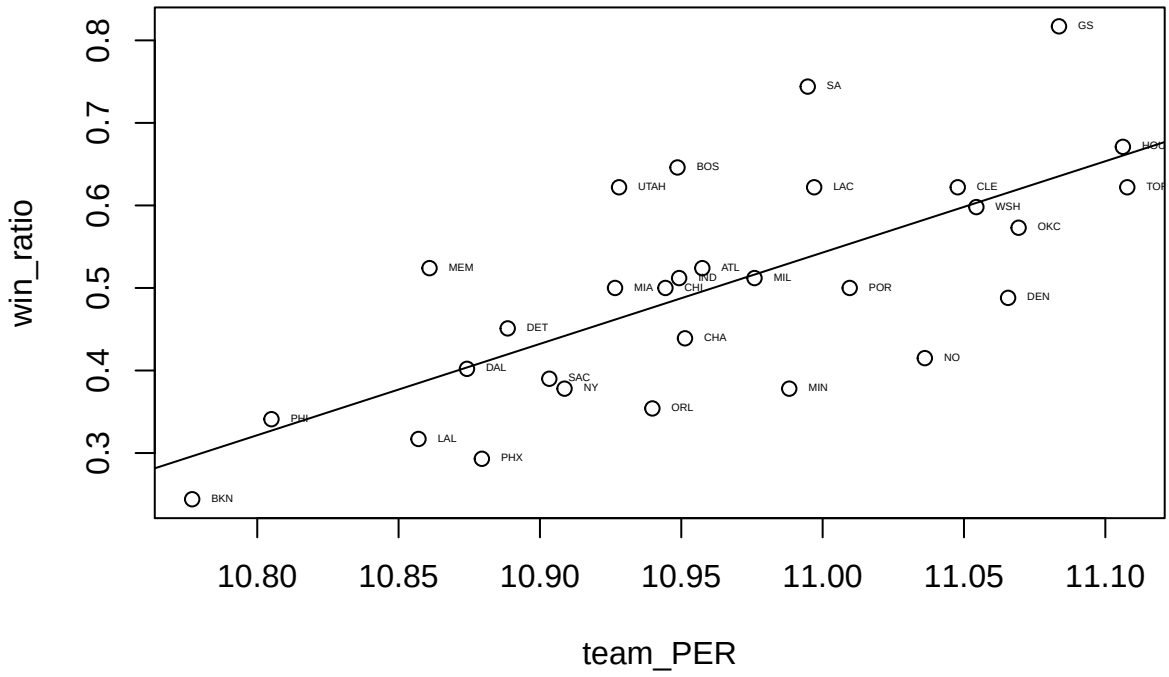



```
## integer(0)
```

```
data17<- raw[raw$season ==2017,]
md17 <-lm(data17$win_ratio~ data17$team_PER,data = data17)
summary(md17)
```

```
##
## Call:
## lm(formula = data17$win_ratio ~ data17$team_PER, data = data17)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.16791 -0.05316 -0.00296  0.03058  0.20692
##
## Coefficients:
##                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -11.6303     2.3402  -4.970 3.01e-05 ***
## data17$team_PER   1.1067     0.2135   5.184 1.68e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0992 on 28 degrees of freedom
## Multiple R-squared:  0.4897, Adjusted R-squared:  0.4715
## F-statistic: 26.87 on 1 and 28 DF,  p-value: 1.679e-05
```

```
plot(data17$team_PER,data17$win_ratio,xlab = 'team_PER', ylab = 'win_ratio', main = '2017 Win_Ratio aga
```


2017 Win_Ratio against team_PER − 12 Players
win_ratio
team_PER
0.3
0.4
0.5
0.6
0.7
0.8
10.80
10.85
10.90
10.95
11.00
11.05
11.10
GS
SA
BOS
UTAH
LAC
CLE
WSH
OKC
MEM
ATL
IND
MIL
MIA
CHI
POR
DEN
DET
CHA
NO
DAL
SAC
NY
MIN
ORL
PHI
LAL
PHX
BKN

```
## integer(0)
```