

Shot Analysis

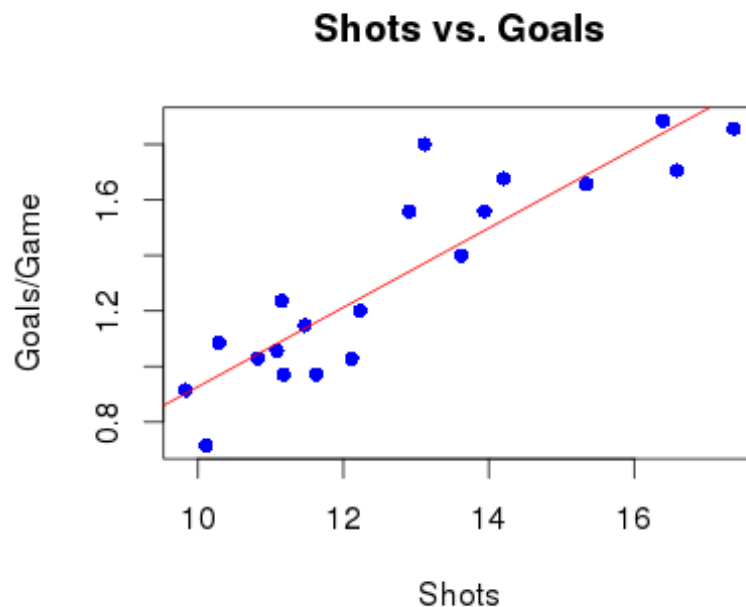
Scoring goals is of utmost importance in football – after all, goals are what win games. There are two important factors in determining the goals a team scores – the number of shots per game and the conversion rate (goals/shot). We investigate which of these things are more important.

In any league there is a big gap between the number of goals scored by the top teams compared to the bottom teams. It could be the case that most teams in a league tend to shoot a similar amount of shots but the higher scoring teams manage to finish more of their chances. Conversely it might be that the conversion rate is reasonably consistent between all teams but the better teams take more shots. In reality it is probably somewhere in the middle but it is intriguing to investigate if there is a stronger correlation between shots and goals or between conversion rate and goals.

The above would be of interest of managers. If it is primarily the number of shots that lead to goals then the manager should ensure that focus is put into chance creation. They could do this by emphasising it on the training ground or else by targeting creative players on the transfer market. On the other hand if the key to scoring goals is converting a higher percentage of your shots then strikers and finishing should be the focal point.

In our analysis we use data from games played in the 2015/2016 premier league season up to 25th April. (Most teams have played 34/35 games).

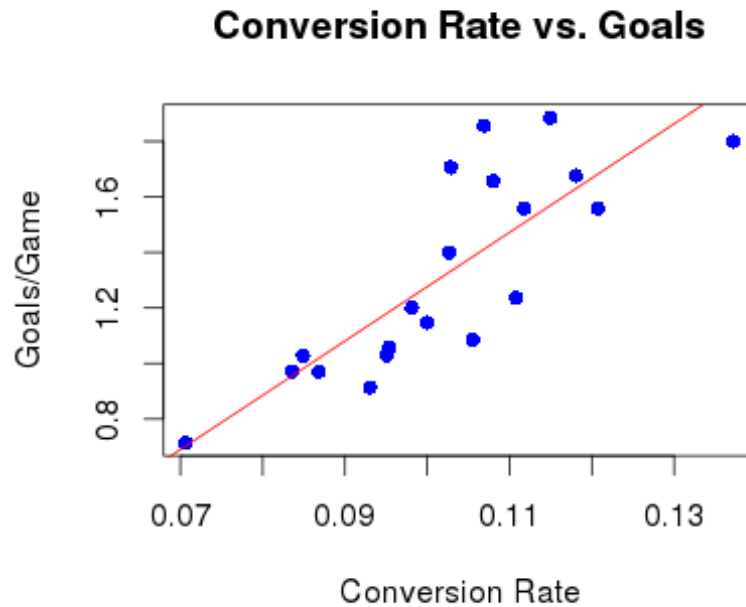
First we look at the correlation between shots and goals. We find the average goals/game and average shots/game for each premier league team and plot the results. Teams shoot between 9.83 (West Brom) and 17.37 (Tottenham) times per game. The average side shoots 12.77 times in a match. The top 5 most high scoring teams take an average of 15.53 shots per game while the worst 5 only manage 10.97 attempts.



As can be seen there is quite a strong correlation between shots and goals. The correlation coefficient is **0.8964674**.

Because of this high correlation we can deduce that shooting a large quantity of shots is a key factor in why the high scoring teams manage to score so many goals.

Next we take a look at the conversion rate (goals/shots ratio) for different teams. The average team only converts on 10.2% of their shots. This means only approximately 1 in 10 shots end up finding the back of the net! The most clinical finishers in the league were Leicester City (13.7%) while Aston Villa's only managed to convert 7.1% of their shots. The top five goal scoring teams had an average rate of 11.5% compared to 8.4% for the bottom 5 teams.



As we can see there also is a strong correlation between conversion rate and goals (Correlation coefficient = **0.8165044**). So we also can deduce that a high conversion rate is essential part of scoring more goals.

Conclusion:

We have found that high scoring teams both shoot more shots and convert these shots at a higher rate. Further, the correlation between goals/shots and goals/conversion rate are very similar so we have no conclusive evidence to support one being more important than another. Hence we think that managers should focus equally on chance creation and finishing skills.