

Capstone Project Proposal

Problem

How does the 3-point shot influence a game/season in the modern NBA?

In today's NBA, there's been a shift in the way the game is played. The game has gone from players like Shaquille O'Neal, Wilt Chamberlain, and Hakeem Olajuwon who had dominated inside presence and controlled the paint. Now we've seen that impact shifted to the 3-point line with players like Stephen Curry, Klay Thompson, and James Harden.

Hopefully by using this study, coaches and players can focus their attention to how this particular part of the game affects their win percentage. If this study's results are conclusive, they can dedicate time to practicing making 3-point shots, 3-point defense, and developing plays that create open 3-point shots.

Approach

The data I plan to use for this study comes from an online database called MySportsFeed. There they log a variety of sports statistics like game stats, season stats, player information, etc. from a wide range of sports. They also provide R script on how to extract data to your specific needs after installing their package. From there, I can use R script to convert the data into a R-friendly and neatly organized dataset.

The ideal approach to this problem is from a play-by-play basis. After a quick overview of the data, it provides who shoots, how much time is on the shot clock, the shot outcome, who was the closest defender, and whether it was assisted. From that data, I can hone my study to understand the statistics of how 3-point shots were produced and compare them on a team by team basis with the game outcome. But seeing how big the datasets could be, that may not be viable. If that's the case, I'll have to generalize the data to game totals and compare the outcomes to the team's game/season success. My hope would also be to use the data to not only look at this problem from an offensive stand-point, but from a defensive one as well by tracking missed 3-point shots against certain teams.

Deliverables

If done correctly and how I envision this project going, I'd like to present my code and represent my results graphically.