Tim Vigers

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Longitudinal Data Analysis

*Final Project Initial Description*

For my final project, I would like to examine how passing has changed over time in the NBA. My theory is that passing has increased over the past ten years or so, and that in general teams that pass more win more games (or at least those that pass successfully win more). For now, I will limit the analysis to the regular season because there is a suggestion that style of play in the NBA is very different between the regular season and the playoffs. If there’s time, it could be interesting to look into this a little bit and see if it bears out in the data, but it might end up being a completely different and much more complex analysis. To answer the questions in the timeline document:

1. Description of data:

The dataset has one row for each team for each season, with columns representing season totals. The columns are wins, losses, minutes played, passes made, passes received, assists, secondary assists, potential assists, assist points created, adjusted assists, and assist to pass percentage. Additional variables such as points, rebounds, etc. can also be downloaded if necessary.

1. Questions of interest:

How has passing changed over time in the NBA? Is there a team by time effect where some teams increased (or decreased) passing at different rates? How does passing affect winning percentage?

1. Explain how data are correlated:

Data are correlated within teams and there are multiple measures over time. One would assume that seasons within teams are correlated with each other, and that some sort of AR(1) or spatial power structure would be necessary to account for this.

1. What makes the dataset interesting?

Passing is probably my favorite thing to watch in basketball (aside from defense, but that’s a little harder to measure), and I’m convinced it’s more important than people think. Also, the Nuggets center Nikola Jokic is one of the best passers in the league, and I’d like to have some data to back up my claims that he deserves an MVP award because passing is as important as scoring.

1. What makes the data set messy or unique?

The data might be a little messy because I’ll need to download it season by season and put it together. It should be relatively clean once it’s downloaded though, so most of the work will be putting everything together.