

NBA MVP Prediction Model: Which individual player performance statistics influence the Most Valuable Player (MVP) award prediction in the NBA

Linear Regression model analysis

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Abstract

This paper presents an NBA player performance statistics analysis to determine which NBA statistics are important in determining the MVP. The analysis consists of linear regression models and visualizations conducted by the statistical programming language R. The results build upon existing research on predicting MVP players from previous seasons by adding newer variables with the newer data from the ongoing 2021-22 NBA season.

Introduction

The National Basketball Association (NBA) is a North American professional men's basketball league comprising of 30 teams from the United States and Canada. Every year, the NBA awards the best performing player in the regular season with the Most Valuable Player (MVP) Award. Although this decision is made through a vote from a panel of sportswriters and broadcasters, player performance statistics are a key component that is utilized to formulate this decision. Every year players with the highest levels of performance, reflected by points, assists, rebounds and other statistics are awarded the MVP award. Since top NBA players such as Nikola Jokic and Joel Embiid reflect similar levels of performance in terms of points, assists and rebounds, the decision every year is extremely close! While there are qualitative factors to making this decision, advanced statistics such as PER (Player Efficiency Rating), WS (Win Share) and Box Plus-Minus (BPM) are usually the differentiating factors between MVP candidates. While our analysis will look into these new advanced statistics, we will also consider adding variables such as player scores in the NBA 2k22 video game to see if there might be an effect.

Since the NBA has a wide range of statistics to measure player performance and how they contribute to their respective teams success, this paper aims to determine which such statistics are key indicators of an MVP season in the NBA. In this paper, we will look at data for the 2021-22 NBA season from BasketballReference.com (2022) for the ongoing regular season to analyze performances throughout the season and make a prediction. We will also use previous years data from BasketballReference.com (2022) to make comparison with previous year MVP's and MVP candidates.

This analysis builds on existing literature by creating a regression model with additional newer statistics that may provide greater predictability. We discuss these variables and provide a prediction using our model for our MVP for 2021-22 in our data section. Using these variables we build a linear regression model(s) to help make an accurate MVP prediction. We discuss key insights on the variables we picked and excluded from our model in the data section. Lastly, we discuss the limitations and weaknesses of our data, model and analysis.

Data

Model

Results

Discussion

First discussion point

Second discussion point

Third discussion point

Weaknesses and next steps

Appendix

Additional details

References

BasketballReference.com. 2022. “Basketball Statistics and History.” <https://www.basketball-reference.com/>.