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Does having more players scoring greater than 15 points per game benefit NBA teams' success?

Introduction:

This paper aims to investigate whether having more players scoring at least 15 points per game contributes to successful season outcomes for NBA teams. Scoring points is one of the most important keys to winning basketball games, and understanding the relationship between higher scoring output from multiple players could be essential to making in-game decisions and team construction. Scoring is a key component of increasing overall team points (Chun et al. 2020), which subsequently can often lead to winning and successful outcomes. The specific impacts on team success of having multiple players scoring more than 15 points per game has not been studied in depth.

Specific Aims:

The research question to be addressed is whether there are links between having more players scoring greater than 15 points per game and overall team success in the NBA. The hypothesis for this question is that having more players scoring greater than 15 points per game can benefit the overall success of an NBA team. Teams in the NBA are always looking for ways to improve their success, taking new approaches based on gameplanning, and this has been increasing in recent years as data-driven analytics are responsible for more decisions being made by coaches and team executives. Analyzing past performance and predicting future performance has become far more important in the past decade as teams look for ways to find new pathways to success. (Chun et al. 2020)

Data Description:

The dataset to be used in this paper is sourced from Kaggle, compiled by Sumitro Datta. This contains information about player and team statistics per game in professional basketball, as well as end of season summaries which provides insights into player performance and team success. There are 35 total variables included in the table of player statistics, however the variables of interest from this include: points per game and team, as the goal is to calculate the count of players on each team scoring 15 points per game or more. The player statistics table includes observations from 5,153 players. The team statistics table contains 1681 team observations, which is due to the fluctuation in league format and team count over time. The variable of interest from this table is team points per game. The team summaries table contains information about end of season success, and the variables of interest from this table include playoffs (boolean), and wins.

Research Design:

The variables selected from the dataset will be merged to analyze the relationship between the count of players scoring greater than 15 points per game on each team, and team success metrics including wins, playoff appearances, and team points per game. Regression analysis will be used to determine if there are significant correlations between having more players scoring greater than 15 points per game, and team success. The findings of this analysis will help to quantitatively view the relationships present between player scoring and team success, by identifying the strength of these relationships and their significance to successful team outcomes.

Discussion:

In a league that is typically offensively oriented, we would expect a positive correlation between the number of players scoring above 15 points per game and the corresponding team success metrics. In recent years, the scoring output has continued to increase as the game of basketball has evolved towards higher usage of the three-point shot. A higher output from more players would appear to be signs of a more cohesive team, with multiple options to score points and ultimately win games in the face of different strategies. If the results of this analysis align with the hypothesis, then this suggests that individual scoring spread among more players is an important factor in team success and should be considered when making signings or trades to build a team that can contend for a title. If the results do not align with the hypothesis, then this suggests that other factors such as coaching, team chemistry, or defensive ability may be more significant towards determining an NBA team's success.

Conclusion:

This proposal is centered around the question of whether or not having a higher number of players making significant offensive contributions leads to greater team success. Using historical and present NBA data, we aim to gather insights into the relationships between these factors, and determine whether this measure could be used to improve team performance. The findings of this could be used to influence the strategy used in coaching strategy, as well as the composition of teams going forward.