Math E-23C Term Project

An analysis of the Lakers 2019 Championship season

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Motivation

Los Angeles Lakers is one of the most recognized sports franchise around the world. They are the basketball team with the most fans with around 22 million.[1]. According to recent polls, 44% of Americans have a positive opinion of the team and 87% of recognize the name of the team (ranking number 2 in both categories, only below Chicago Bulls).[2].

The season 2019-20 proved to be a very important season for LA Lakers. First, it was a season when playoffs were suspended due to COVID. Then, the season was also relevant due to the death of Kobe Bryant, Lakers world-known star. Whatever these circumstances, Lakers won the NBA Western Conference title and the NBA championship with a record of 52 wins against 19 loses.

The present data analytic exercises investigates the successful and historic campaing of the Lakers.

Data set

The data set that we use for our analysis contains the 92 games that Lakers played during the season.[3] This game log has as observations every single game of the season including the regular season, the playoffs and the final against Miami. As variables the data set is exhaustive in recording the details of the game from both teams: we have data on points scored, goal attempts, goal percentage, number of goals and type of goals (field, 3-point, free throw), rebounds, steals, blocks, turnovers and fouls.

Main findings

- Using a chi-squared goodness of fit test, we found that Lakers scores can plausibly be modeled as a normal distribution. In contrast, we do not find evidence that modelling the opponents scores as a normal distribution is warranted.

- Through the use of a permutation test, chi-squared test and computation of the p-value, we were able to confirm our hypothesis that there is no significant difference between the scores of the Lakers whether their opponent hailed from the Eastern conference or the Western conference.

- Using linear and logistic regression we found that winning is correlated with field goals and 3-points but not so with free throws and personal fouls, suggesting that the Lakers are better when their game play is focused on offensive game rather than waiting for mistakes of the team.

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[1] https://bolavip.com/en/nba/The-25-NBA-teams-with-most-fans-20200423-0002.html
[2] https://today.yougov.com/ratings/sports/fame/basketball-teams/all
[3] Available here: https://www.basketball-reference.com/teams/LAL/2020/gamelog/