

COVID-19 Pandemic and the NBA Isolation Zone



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image source: usatoday.com

Summary

During a global pandemic, the National Basketball Association (NBA) finished the rest of the season in Walt Disney World, Florida in a first of its kind isolated 'Bubble'. We explore the **effect on the NBA playoffs**. We analyze how the **factors** that determine player and game outcome have **changed** without travel or fans at games.

Approach

Identified and researched **box-scores, hustle, team composition, game rotation, and shot selection statistics**.

For each factor, we performed a two step process:

- Step 1: What contributed to **outcome** (win/loss)
- Step 2: Compare step 1 results to **previous seasons**

Hustle and Age contribution have never been analyzed before in relation to game outcome. In addition, an NBA Bubble has never been analyzed before.

NBA Playoff Dataset using NBA_API and Basketball Reference

Number of Endpoints: 133 (10k-100k+ rows with 12-60+ datapoints)

Number of Teams: 80

Number of Games: 412

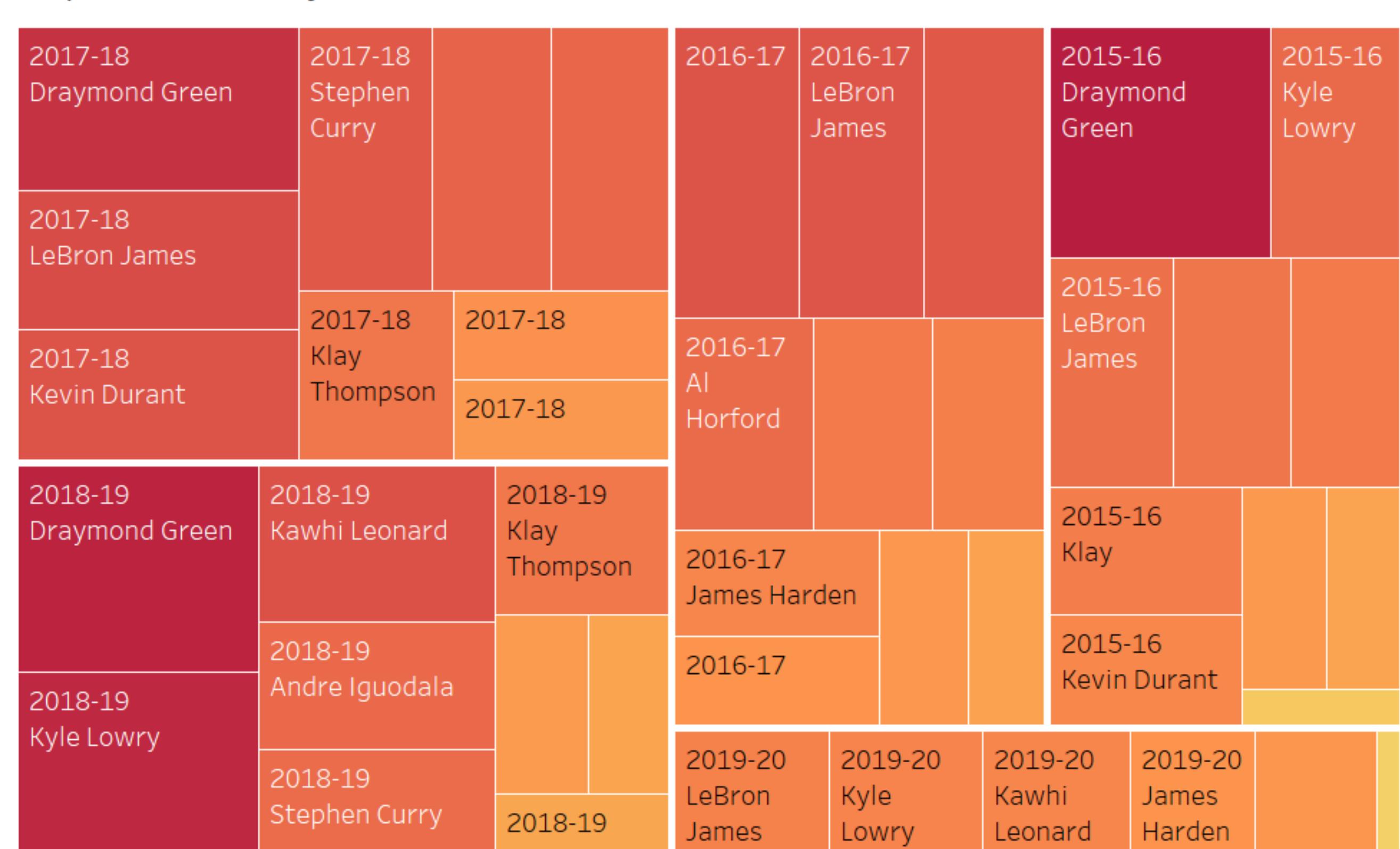
Time Period: 2015 - 2020

Patterns, Observations, & Analysis

Hustle stats - contested shots, deflections, screen assists, box outs, charges drawn, loose balls recovered

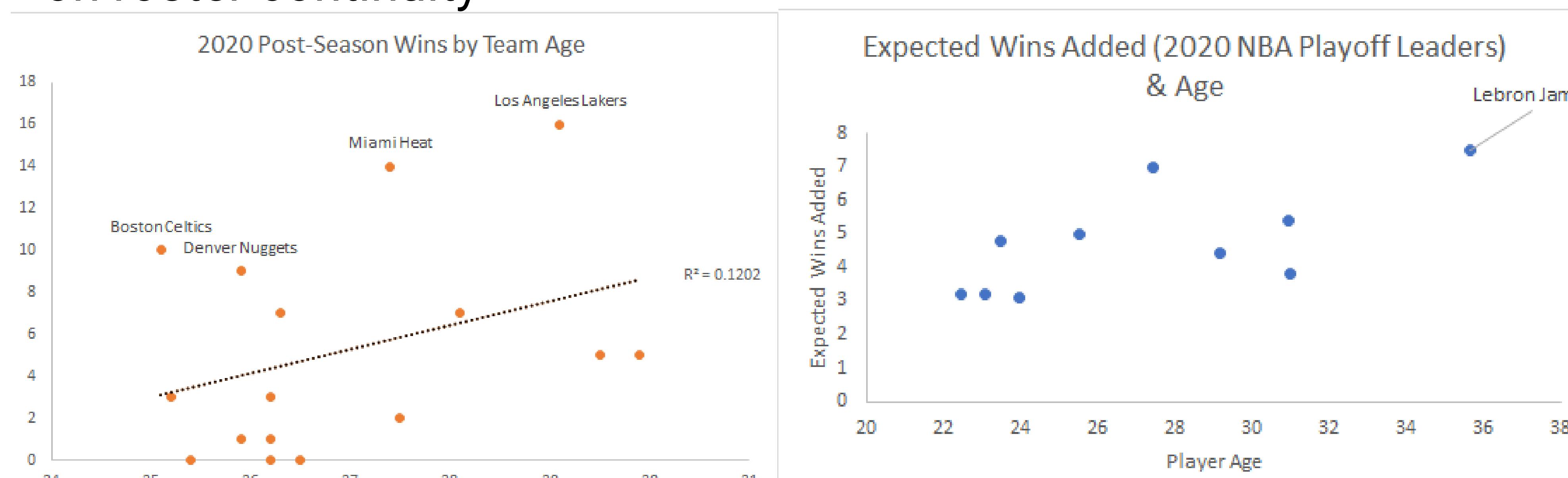
- team hustle stats were **more predictive** of outcomes in bubble vs. prior seasons using classification algorithms including logistic regression, SVC, KNN, random forest
- top hustle players were **highly correlated** to wins in the bubble and in prior seasons with championship teams having one or multiple players represented in ranking

Top Hustle Players



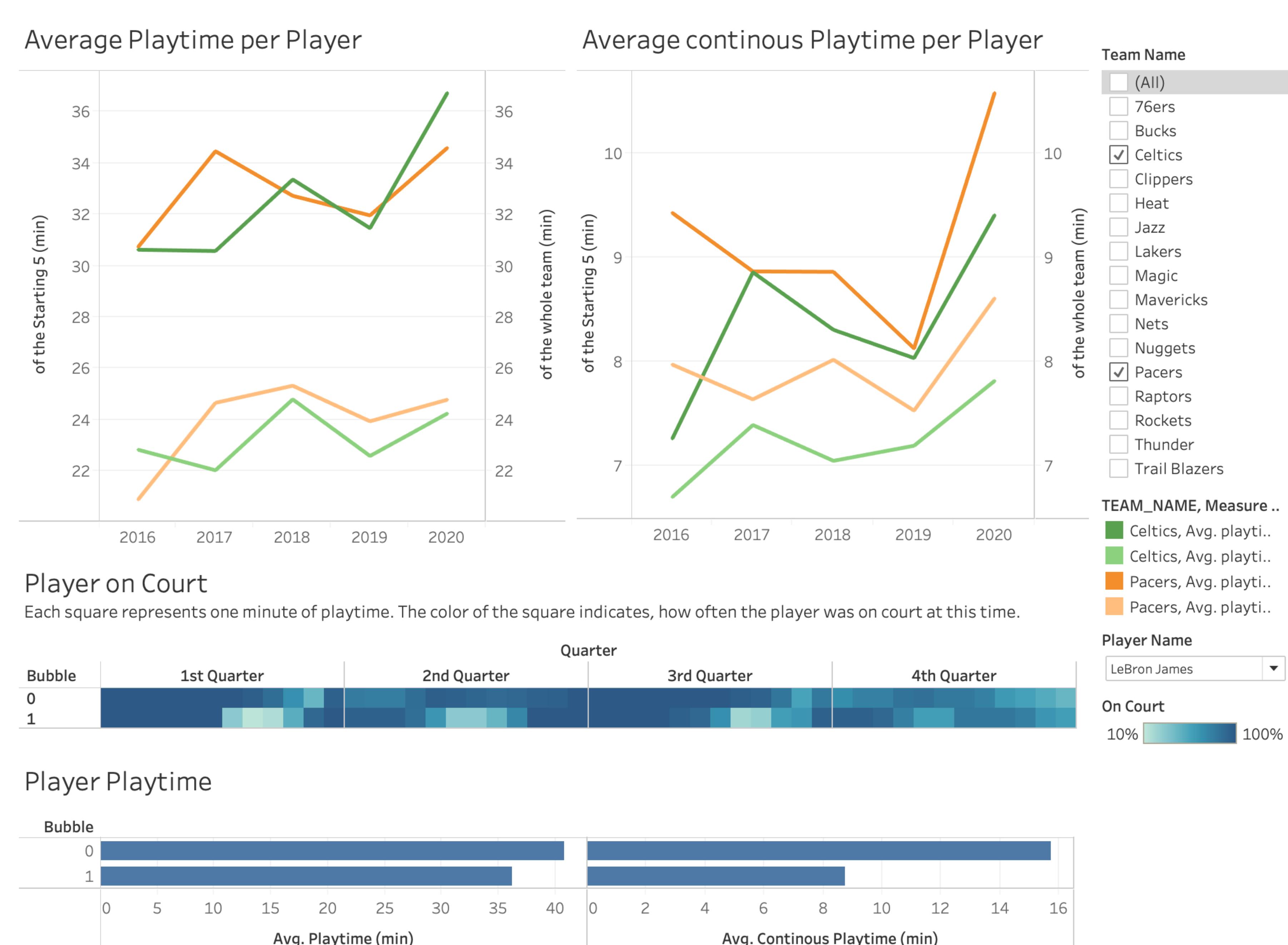
Team Composition - age, trades, free agency

- on average veteran teams were **better** than younger teams
- champion Lakers were among the oldest teams
- teams relied more heavily on **trades** and **free-agency** than on roster continuity



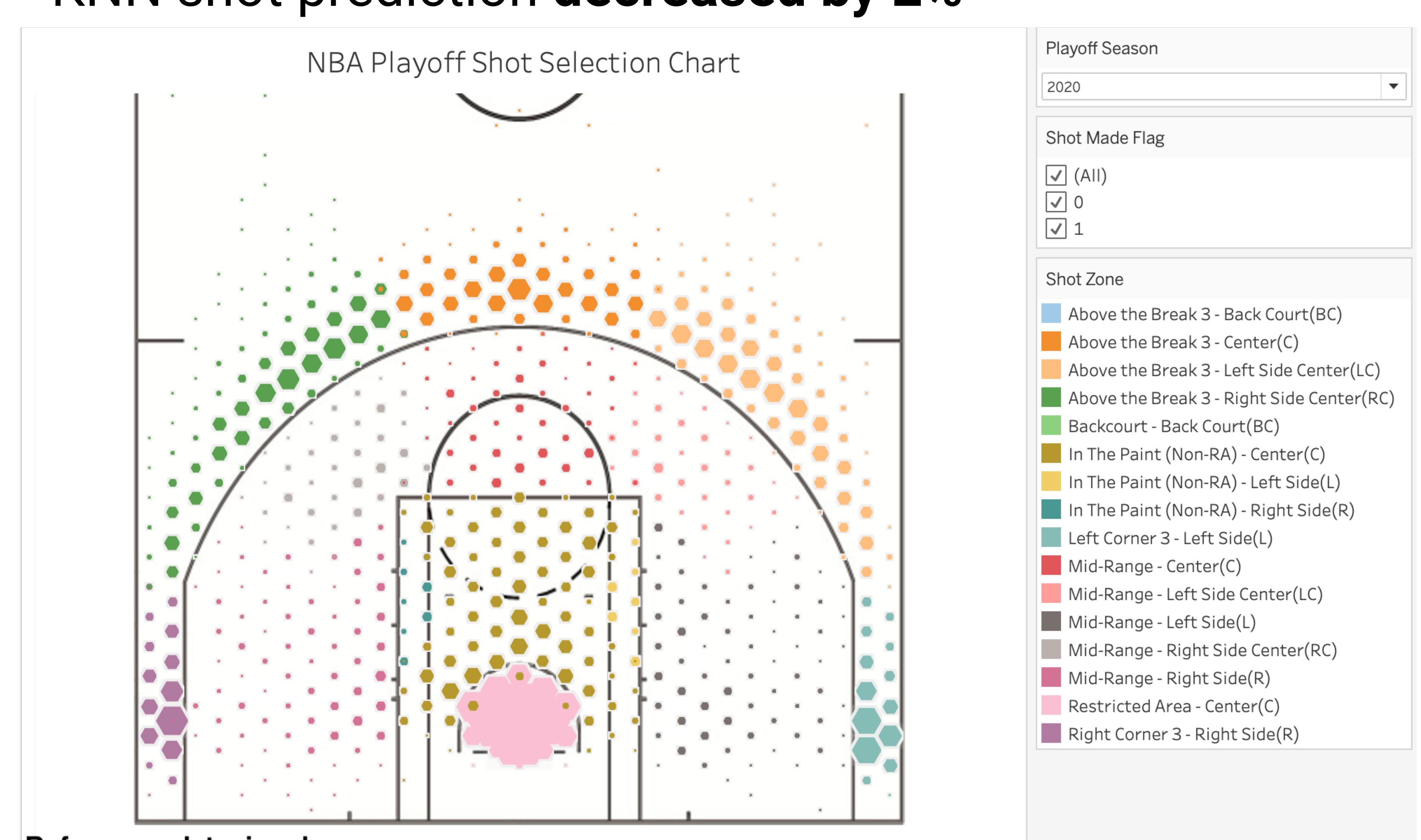
Game Rotation - lineup and substitution changes

- for 69% of the teams the rotations of the starting 5 decreased which led to an increase in continuous playing time of **30 sec on average**
- game rotation metrics analyzed using Logit Regression did not have significant predictive power on game outcome



Shot Selection - location, type, outcome

- shot distance **increased** by 6%
- shot location switched back to left side of court
- KNN shot prediction **decreased** by 2%



Reference: datavizardry.com

Evaluation

- scoring percentages and scoring **increased** slightly
- compared to prior seasons, the **3pt shot** is the most common
- younger teams over-performed, but older teams continue to win more
- defense & hustle** still win championships
- continuous playtime per player increased
- points attributable to free throws in post-season vs regular season increased by **28%** compared to past 5 seasons

Overall, the Bubble exhibited and exacerbated many of the same trends in prior seasons.