

Performance and Salaries of NBA Players

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Presentation Outline

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Project Description

- ▶ Analyzing basketball players data from the NBA League in the 2015-2016 season

Our Aim: In the 2015-2016 season, how do the skills of a player relate to his salary?

Source of Data

- ▶ Basketball Reference
- ▶ Roster, Total, and Salaries tables

Methodology - Data Acquisition

- ▶ Two phases of webscraping
 1. Get list of team abbreviations
 2. Get the roster, salary, and totals tables via their IDs

Methodology - Data Cleaning

- ▶ First we cleaned the data, then we merged the tables

EDA

- ▶ Split data into qualitative and quantitative
- ▶ Qualitative - used `dplyr` and `frequency` to analyze
- ▶ Quantitative - used `summary()` to get a summary of statistics

Data Analysis - EFF

- ▶ $EFF = (\text{total points} + \text{total rebounds} + \text{assists} + \text{steals} + \text{blocks} - \text{missed field goals} - \text{missed free throws} - \text{turnovers}) / (\text{games played})$

Data Analysis - Salary Aggregates

- ▶ Aggregated salary data by team

Shiny Apps:

- ▶ Check out our nifty apps:

1. Team Salaries app -

<https://stat133.shinyapps.io/team-salaries/>

2. Statistic Salaries app -

<https://stat133.shinyapps.io/stat-salaries/>

Results

- ▶ EFF and salary are positively correlated ($r = 0.474$)
- ▶ Experience showed relatively weak correlation with EFF ($r = 0.209$)
- ▶ EFF is weakly correlated with points while strongly correlated with steals ($r = 0.605$) and defensive rebounds ($r = 0.698$, $r = 0.706$)

Conclusions

- ▶ While there is a positive correlation between EFF and salary, it is only moderate
- ▶ Our results can help managers better decide salaries for recruits
- ▶ we hypothesize that, in general, the salary is highly correlated with the number of wins that players bring in to the team