



NBA Talent Selection and Trades Insights for 2025

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Agenda

Introduction

Objectives

Data Sourcing and Wrangling

Limitations

Question 1

Question 2

Question 3

Recommendations

Upcoming research



Objectives



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graph LR; A((Objectives)) --> B[Investigate the relationship of team changes against salaries and performance metrics]; A --> C[Determine the benchmark values of key performance metrics to recruit future players from college];
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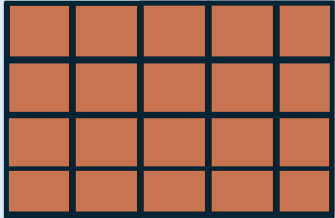
Investigate the relationship of team changes against salaries and performance metrics

Determine the benchmark values of key performance metrics to recruit future players from college

Support **data-driven decisions** for recruitment of players from college and trade-offs for NBA teams



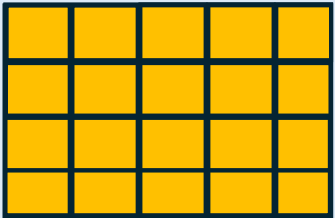
Data Sources



Basketball Players Stats per Season - 49 Leagues

Consist of performance metric and physical attribute data of around 11,000 players from 49 leagues between the years 1999 - 2020

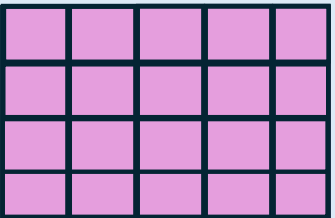
kaggle



NBA Salaries By Players of Season 2000 to 2019

Consist of salaries of a sample of 1871 players across 19 NBA seasons from 2000-2019.

kaggle



College game statistics of NBA players

Consist of college performance metric data of a sample of NBA players who played between 1980 - 2022

kaggle

Data Wrangling: Question 1

Basketball dataset

College dataset

Salary dataset

Custom calculations

Basketball Player dataset

Salary dataset

Filter for NBA players
that played in Regular
Seasons between
2000 - 2019



Make name-key column
and join both tables on the
name-key



Create columns for custom
calculated performance
indicators and standardise
for comparability



Remove unnecessary
columns of data



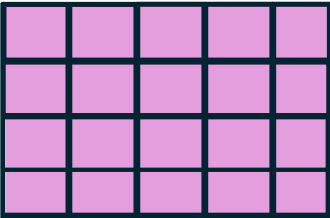
Final dataset



Data Wrangling: Question 2

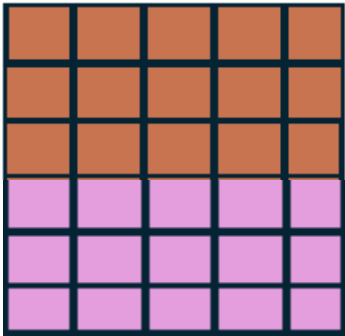


Filtered NBA player stats that played in Regular Seasons between 2000 - 2019



College dataset

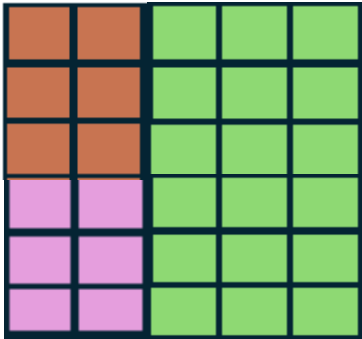
Append NBA player stats dataset and college dataset based on the common names between them




Calculate custom performance metrics for college and NBA performance





Remove unnecessary columns of data




Final dataset

Basketball dataset

College dataset

Salary dataset

Custom calculations



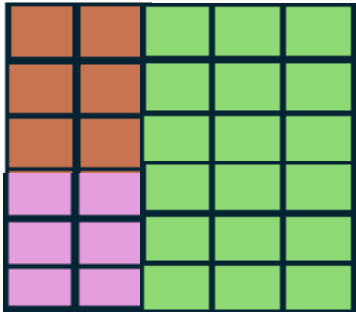
Data Wrangling: Question 3

Basketball dataset

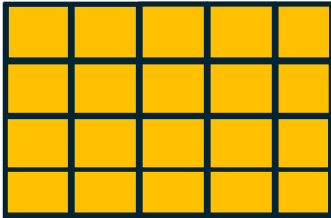
College dataset

Salary dataset

Custom calculations



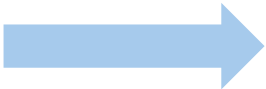
Dataset from
Question 2



Salary dataset



Take NBA data from
Q2 dataset, extract
relevant college data
and join onto the
salary dataset



Remove unnecessary
columns of data



Final dataset



Limitations



Tenure Bias

Players playing for more years will have higher averages



Superstar Players

There are superstar players who have exceptional performance



External Factors

2011 Collective Bargain Agreement, rise of media and player popularity

Our Questions

How does team change impact a player's performance and salary?



Question 1

What are the benchmark KPI values to consider when recruiting fresh college talent for the NBA?



Question 2

Which colleges produce top NBA talent, and what do their alumni salaries say about their value?



Question 3

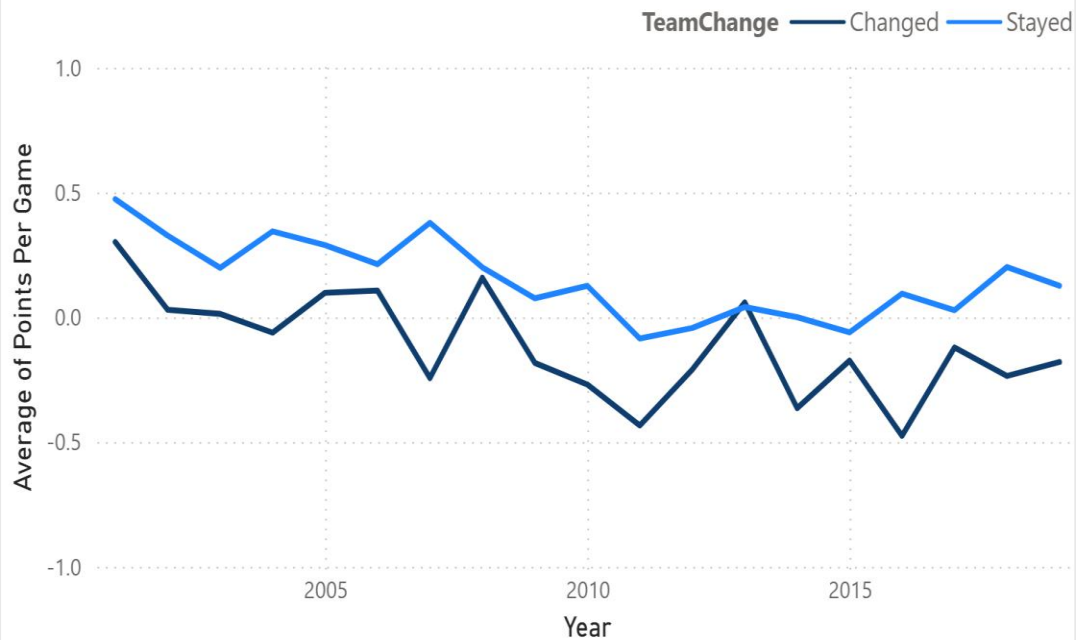


How does team change impact a player's performance and salary?



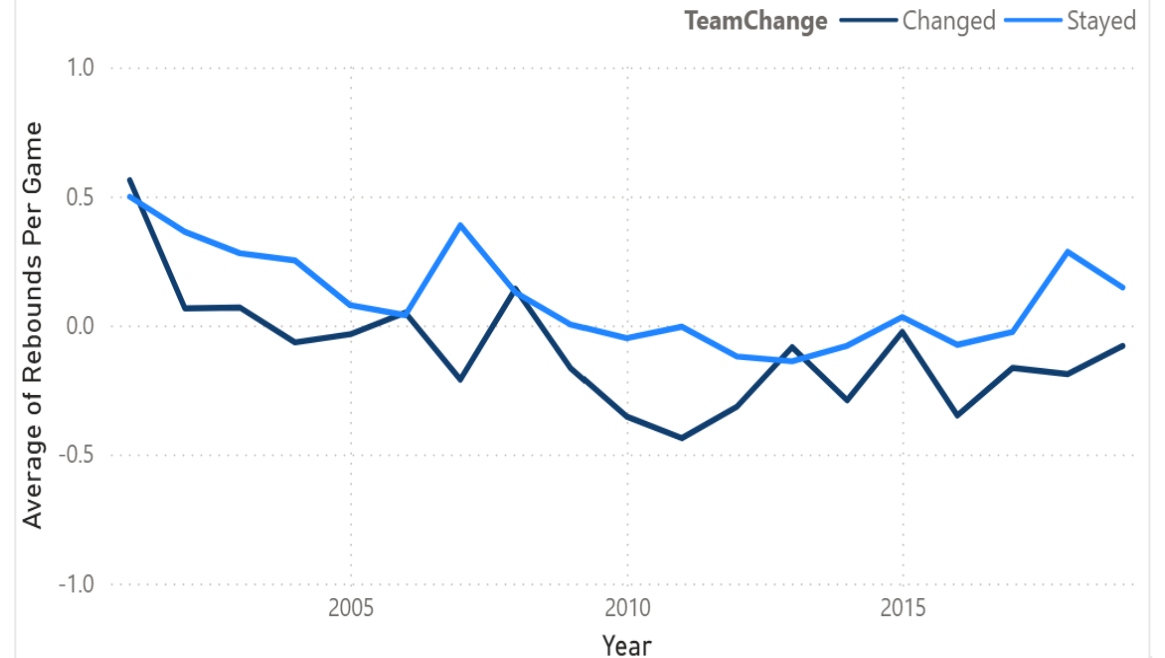
Observations

Average Points Per Game vs Team Change



- Players who stayed with the same team scored slightly higher on average.
- This suggests that stability and team chemistry contributes to enhanced scoring consistency.

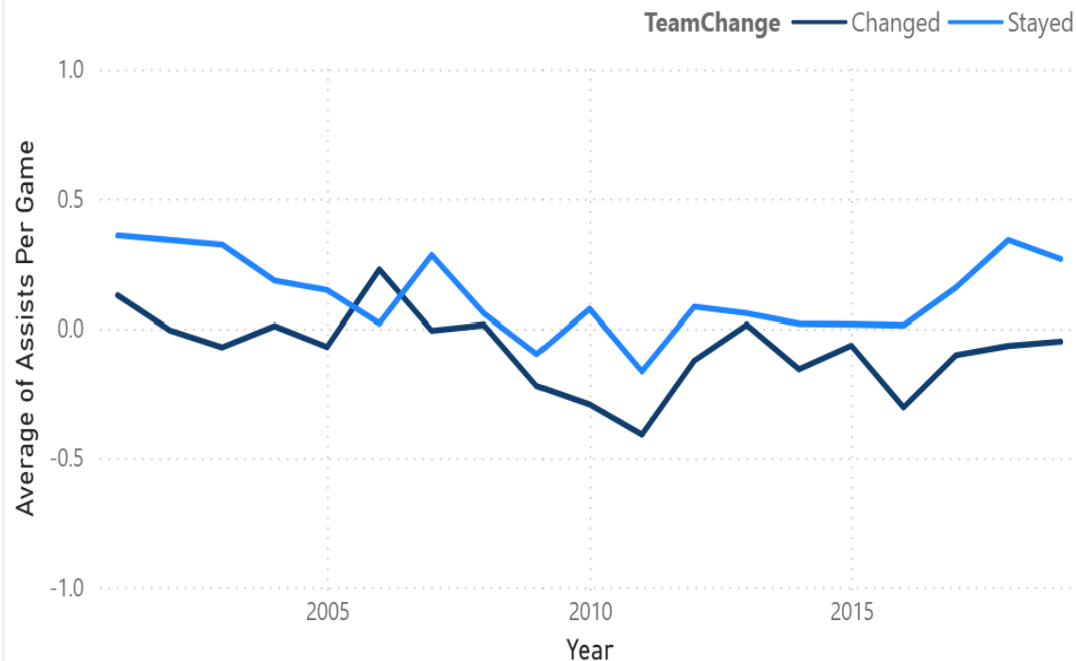
Rebounds Per Game vs Team Change



- Rebounds per game show slight variation between players who stayed with the same team and those who changed teams.
- Rebounding is more influenced by physical attributes and positioning than by playstyle.

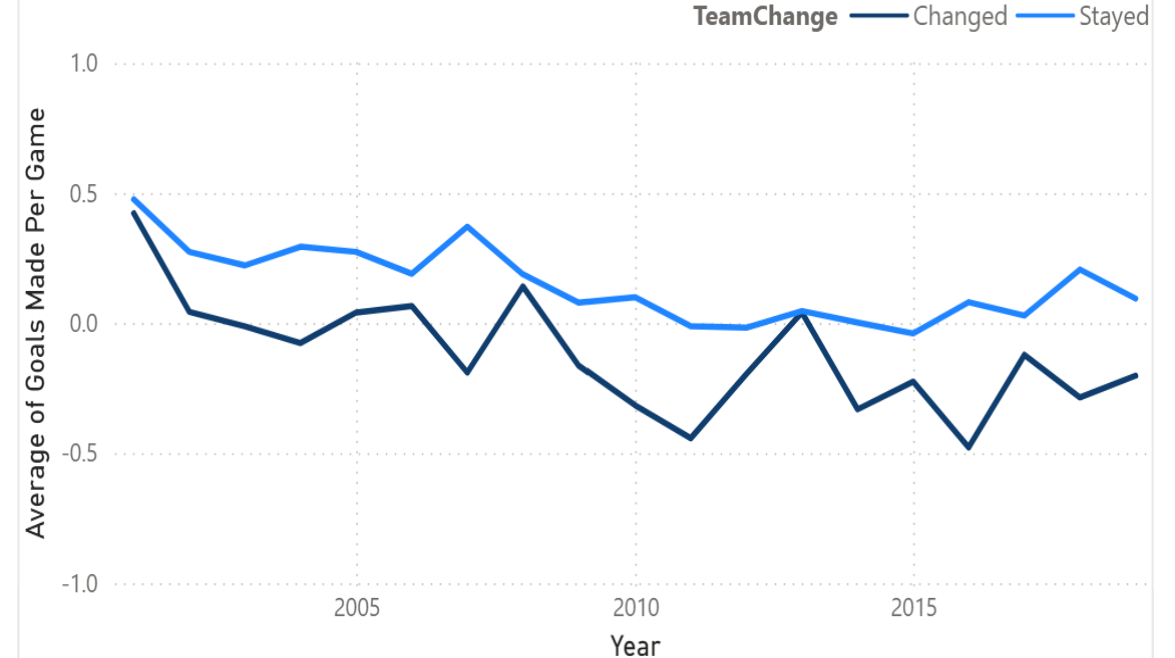
Observations

Assists Per Game vs Team Change



- Players who stayed with the same team had higher assist averages → due to better playstyle integration
- Larger variations in team change → team changes can disrupt playmaking until adaptation takes place.

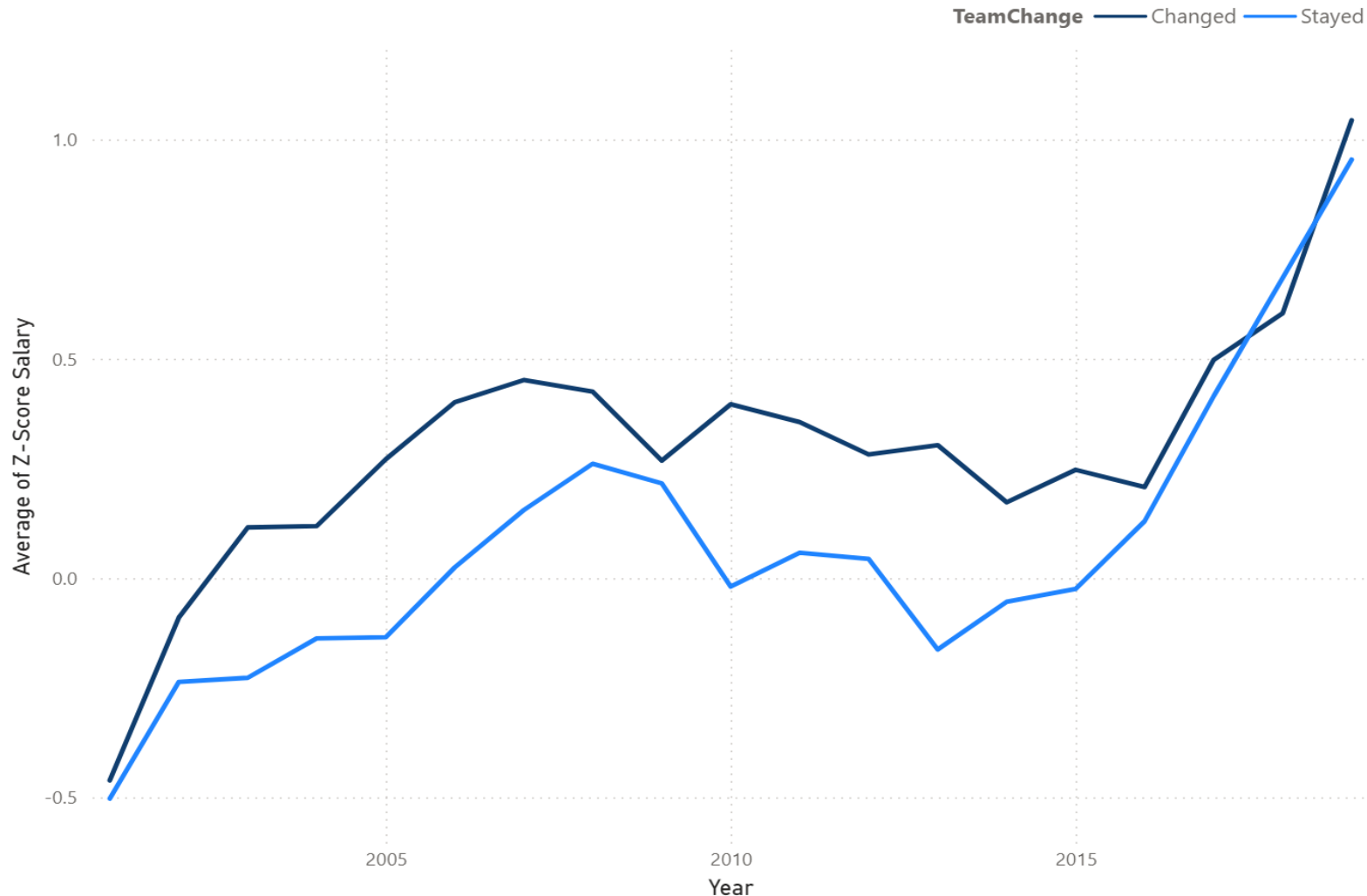
Goals Made Per Game vs Team Change



- Players who stayed with the same team scored more goals → stability enhances offensive contributions.
- Better understanding and team chemistry play a key role in this improvement.

Observations

Average Salary by Team Change



Players who changed teams had slightly higher salaries than those who stayed

2009 – 2019 Major Market Changes: NBA player wages fell significantly due to:

- The 2008 financial crisis
- The 2011 Collective Bargaining Agreement (CBA)
- TV Deals causing the spike

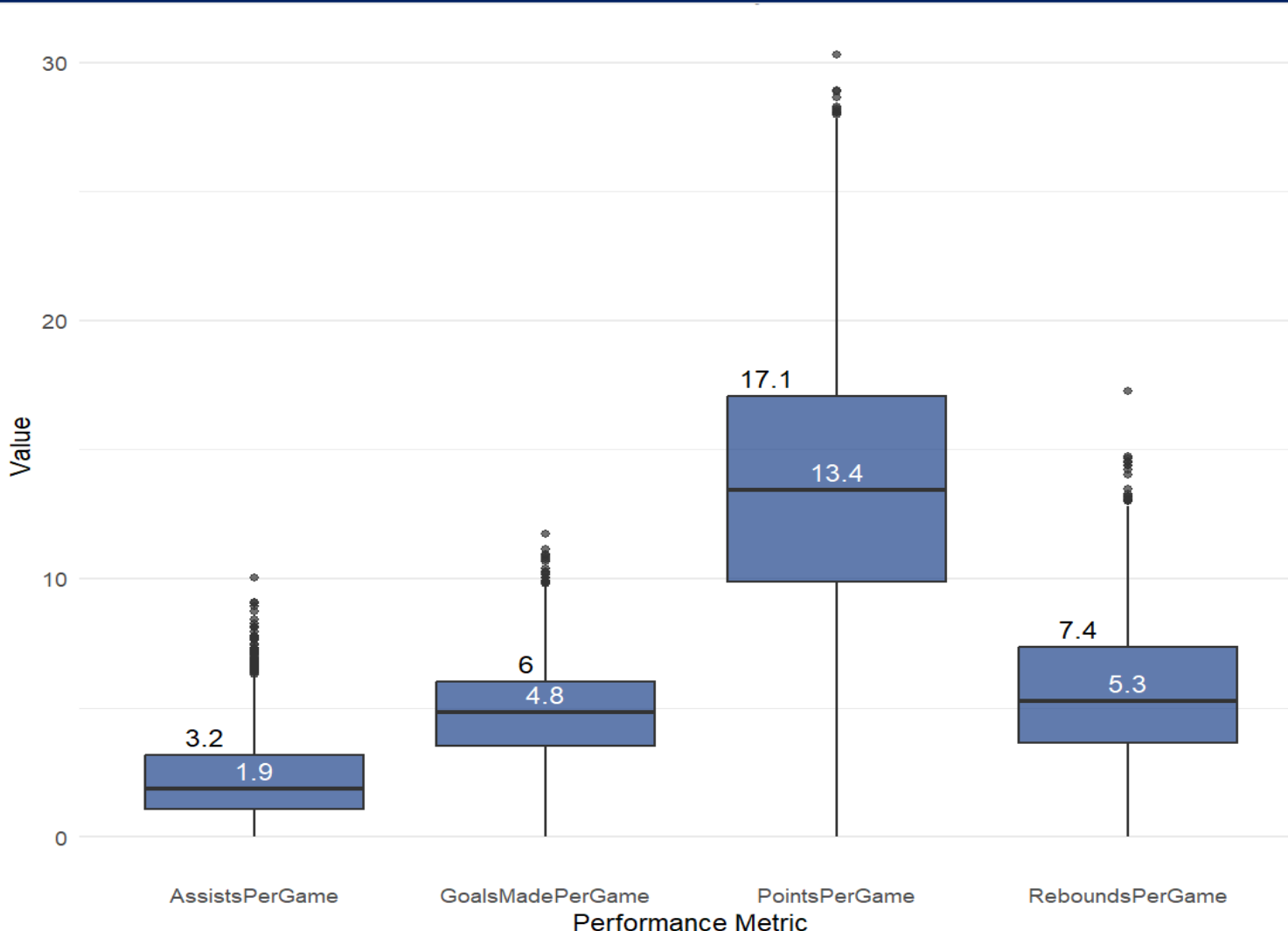
Impact: Players who stayed with their teams faced stagnant earnings, while those who changed teams had more opportunities to renegotiate salaries.

What are the benchmark KPI values to consider when recruiting fresh college talent for the NBA?



Observations

Distribution of Performance Metrics of College Players



Median values to represent typical performance levels per game:

- 1.9 assists
- 4.8 goals made
- 13.4 points
- 5.3 rebounds

Per game, top performers (75th percentile) exceed:

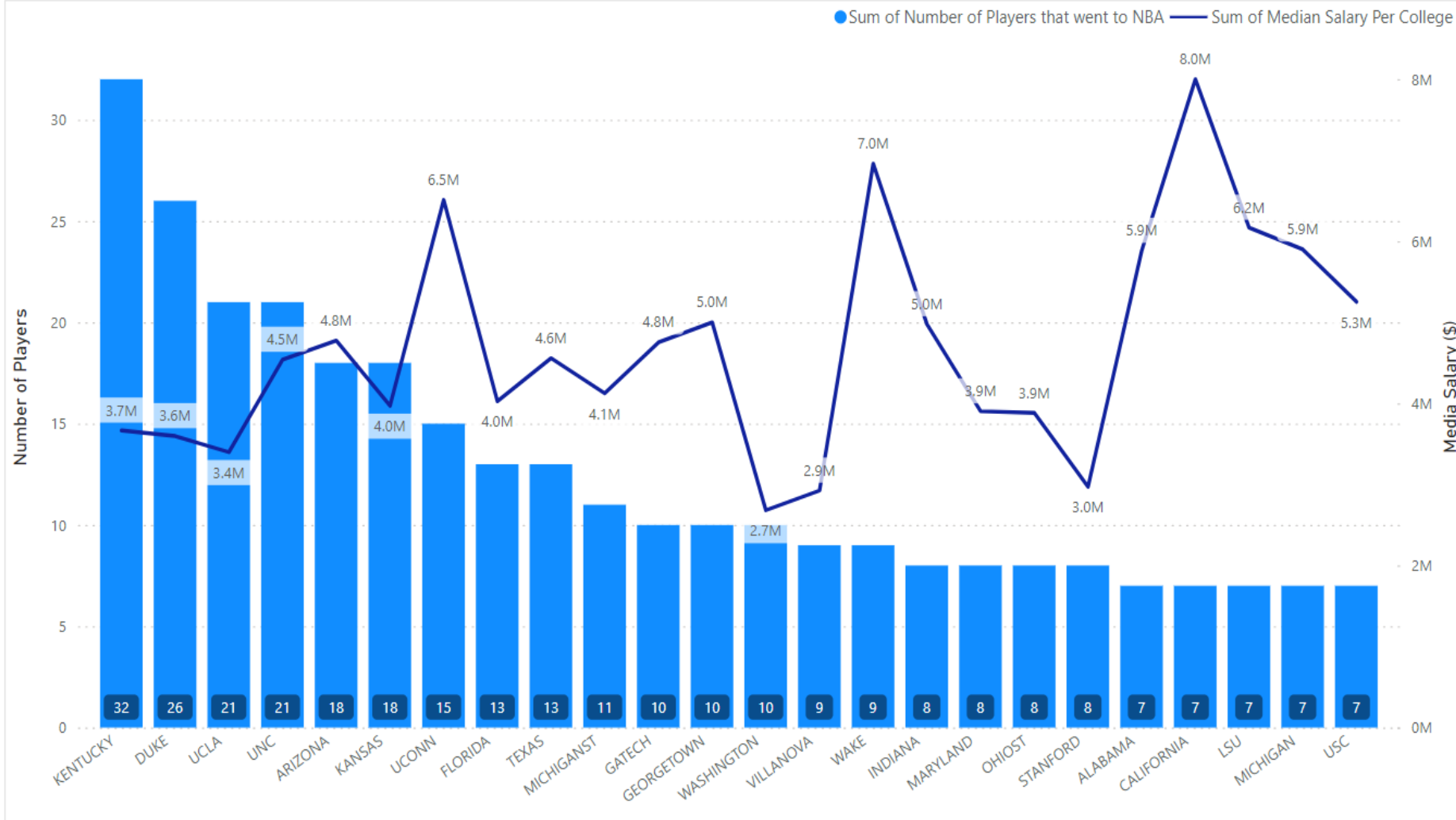
- 3.2 assists
- 6 goals
- 17 points
- 7.4 rebounds

Which colleges produce top NBA talent,
and what do their alumni salaries say
about their value?



Observations

Median Salary and Number of NBA players VS College they graduated from



- Kentucky and Duke dominate as NBA talent powerhouses (25+ players transitioning into NBA)
- UCONN, Wake and California produce fewer players but fetch more lucrative contracts (\$6.5- \$8 million)

Recommendations



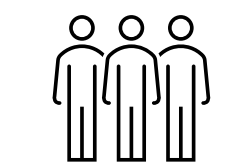


Building Champions: Maximizing Wins, Managing Budgets, Securing Success

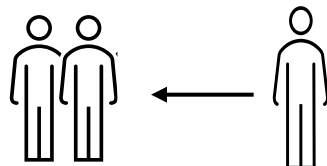
Recommendations

Key Insights:

Team stability is a strong influencer for maintaining performance and attaining success.



**Player
Retention**



**Player
Acquisition**

Source: Hoops, 2022

Retention benefits



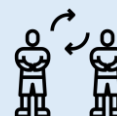
Ensures team cohesion



Cost-effective
(Acquiring New Players = Higher Salaries)



Reduces risk of inconsistent performance
from new players.



Strategic adjustments to be made only
when required for stability and long-term
success.

Recommendations

Benchmark Metrics

All rounder players: Players with metrics around median values

Specialized players:

Scorers (Shooting guards) →
~ 17 points per game

Playmakers (Point Guards)→
~ 3 assists per game

Rebounders (Power forward) →
~ 7 rebounds per game

Which colleges to recruit from?



- For larger pool of potential players – visit colleges like Kentucky or Duke
- Assuming higher median salaries correlate to better performance → colleges like UConn and California might provide higher ROI




BASKETBALL NETWORK

"90's NBA teams practiced more often and harder and played back to back" - Stan Van Gundy is confused with the paradox of increased injuries in today's NBA


Kevin Durant also responded to SVG's tweet to share his take on the matter.

NICOLE GANGLANI • JAN 19, 2023 5:40 AM EST




 **r/nba** • 2 yr. ago
egoblast

Why does it seem like NBA stars are getting injured more frequently than ever before?

 **r/nba** • 3 yr. ago
SlatheredButtCheeks

What's the deal with NBA injuries - Am I crazy or does it seem like there are more catastrophic injuries than ever before, despite all the advancements we've made

 **r/nba** • 3 yr. ago
Noah-Buddy-I-Know

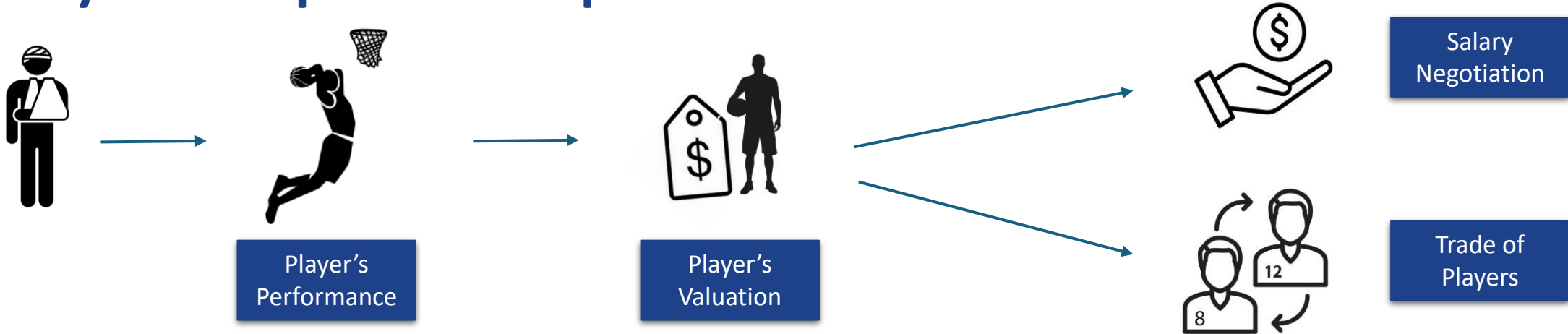
Why do Players seem to play less games and get injured more today?



How do injury occurrences and patterns influence a player's salary and their likelihood of being traded?

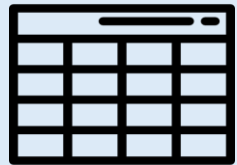


Why is this question important?

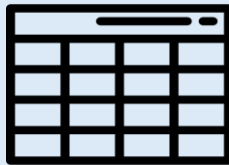


How do we answer this question?

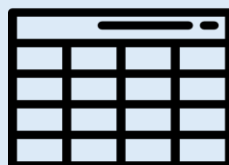
Current Datasets



Performance Metrics



Salaries



College Game Statistics

Website with Injury Data

PRO SPORTS TRANSACTIONS

[Home](#)

Baseball Welcome to the Pro Sports Transactions Archive. The objective of this site is simple: to document every transaction—including trades, free agent movements, signings, waivers, draft picks, injuries, movement to and from minor leagues, disciplinary actions, and legal/criminal actions—in the history of five popular North American professional sports ([baseball](#), [basketball](#), [football](#), [hockey](#), and [soccer](#)).

Basketball The project started in August of 2004 with the compilation of basketball transactions. The site first went public in July of 2005 with just basketball data. Reaction to the site was so favorable that work was begun on compiling transaction data for other sports.

Football The status of the project is as such:

Hockey [Basketball](#) (over 151,000 distinct entries) and [hockey](#) (over 238,000 distinct entries) are the most complete. Obviously historical data from the earlier days of the game is not easy to come by, so by "complete" we don't mean to claim that there might not be transactions that took place that aren't listed. However we are confident that it is the most complete database of pro basketball and hockey transactions available.

Soccer [Football](#) (over 410,000 distinct entries) and [baseball](#) (over 499,000 distinct entries) are less complete. Most currently active players have complete transaction histories. Due to the sheer number of players involved in these two sports, there is still considerable work to be done before these sports are completely done.

[Soccer](#) (over 18,000 distinct entries) was added in early 2017. Compilation of transaction data continues daily.

There are now over 1.3 million total transaction records in the database. Work continues daily to update the databases for each of the five sports. Please use the links below to let us know of any errors you may have, or to just let us know what you think of the site.

<https://www.prosportstransactions.com/>



How do we get this data?



Applying Publicly Available Web Scraping Tool

PRO SPORTS TRANSACTIONS

[Home](#) > [Basketball](#)

Search Basketball Transactions

Player / Coach / Exec Name

Transaction Type

- ☐ Player / Coach / Executive movement (trades, free agent signings, draft picks, etc.)
- ☐ Movement to and from minor leagues
- ☐ Movement to and from disabled/injured list
- ☒ Missed games due to injuries
- ☐ Missed games due to personal reasons
- ☐ Disciplinary actions (suspensions, fines, etc.)
- ☐ Legal / Criminal incidents

Begin Date (yyyy-mm-dd)

End Date (yyyy-mm-dd)

Date	Team	Acquired	Relinquished	Notes
3/01/2000	Celtics		Dana Barros	flu (DNP)
3/01/2000	Warriors		Chris Mills	bone spurs in right ankle (DNP)
4/01/2000	Celtics		Dana Barros	flu (DNP)
4/01/2000	Grizzlies		Cherokee Parks	pulled right groin (DNP)
4/01/2000	Grizzlies		Dennis Scott	strained left calf (DNP)

Sample Data Collected



Impact on Team Changes

Impact on Salary Adjustments



Thank you



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