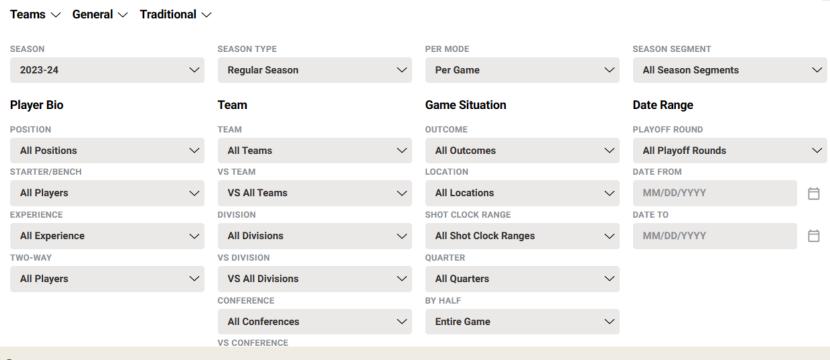
THE NEED FOR SPEED IN THE NBA

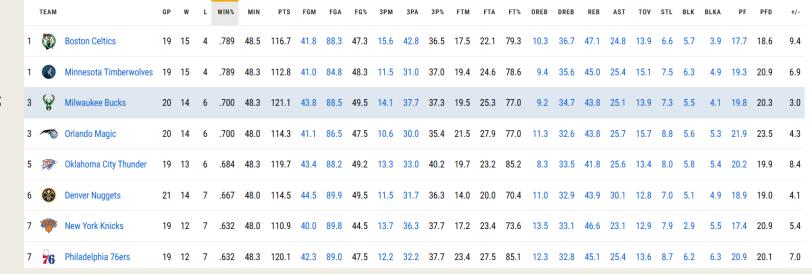
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Data Set

■ NBA.com

- Trusted organization
- Commonly used
- Wide range of statistics
- Updated regularly
- Structured
- Archives of past seasons





First Problems

R Studio doesn't read our csv perfectly

- Our csv file got jumbled
- Coding around it

Using variables from two different data sets

- Creating Unique ID for each column
- Combine both data sets into one

Copy and Paste into Excel

- Some teams had other teams' stats
- Manually editing data

Understanding each statistic

- Over 100 different statistics
- Researching how each stat is calculated and it's meaning

Perspective

- Speed is not just physical
 - Gregg Popovich "Speed isn't just about running; it's about making the right decisions quickly, Players who can process the game at a rapid pace have a significant impact"
- Speed is important
 - Steve Kerr "Speed is a game-changer in today's NBA. It allows us to push the tempo and create opportunities, both offensively and defensively"

Hypothesis Fast teams have more success

Other Questions

Is speed important in the current NBA era?

How often do fast/slow teams win?

Are there specific player positions where speed has a more significant impact on team performance?

What are the differences in the impact of speed between regular season and playoff games?

BREAKDOWN OF OUR ANALYSIS

- Asked questions
- Researched strong arguments
- NBA website into one excel sheet
- R-Studio for correlation



Is speed important in the NBA?

- Yes
 - faster players would have more defensive stops and breakaway layups
- PIE
- PACE
 - measured by how many possessions a team uses in 48 minutes
 - higher the pace, the faster the teams play, the more opportunities for scoring

What is PIE?

- Player Impact Estimate
- Metric to gauge a player's all-around contribution to the game
- Almost all statistical categories are involved in the PIE formula
- If we take the average of every player on a team, we can find the overall team efficiency.

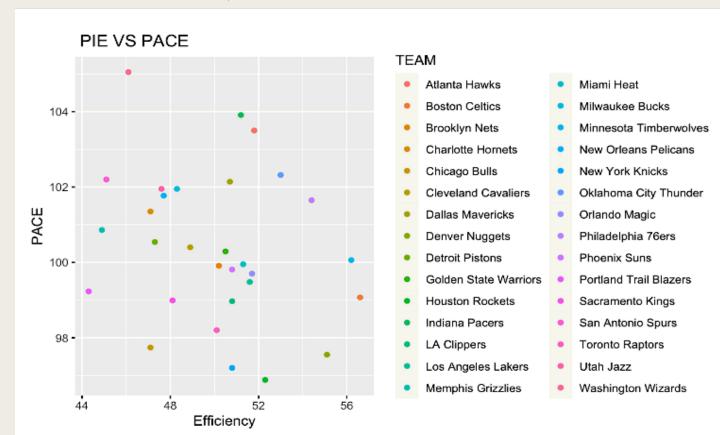


A deeper look...

■ Now that we have talked about PIE and PACE, let's see the correlation between the

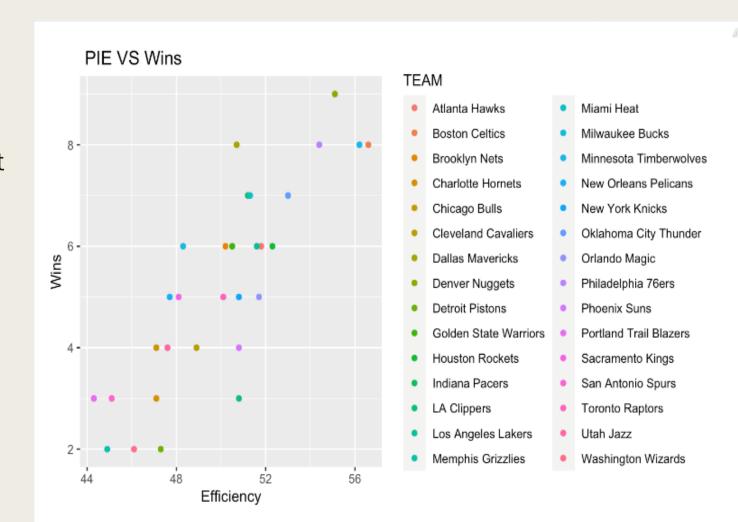
two of them.

As we can see there is a negative correlation between the two, which the correlation = 0.238. Showing that there is little correlation between the two.



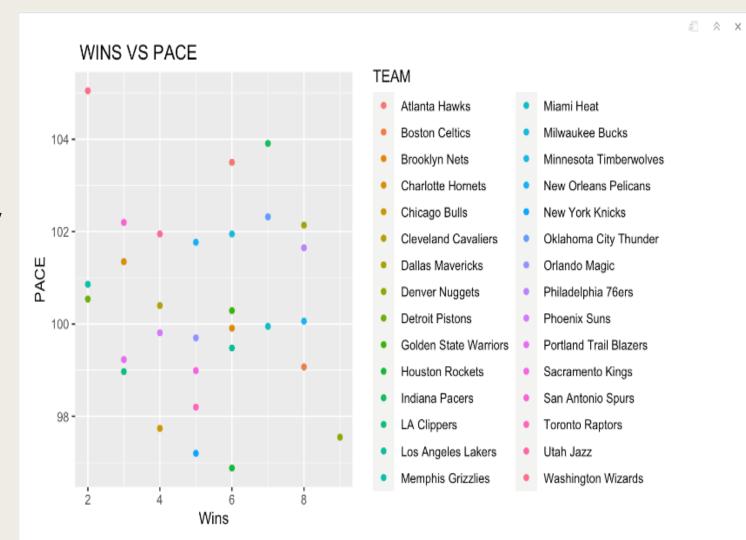
What this tells us

more efficient on the count, their teams will have a better chance, but this tells us the real correlation between the two. We found the correlation to be 0.841, meaning there is a high correlation between player impact and wins during the season.



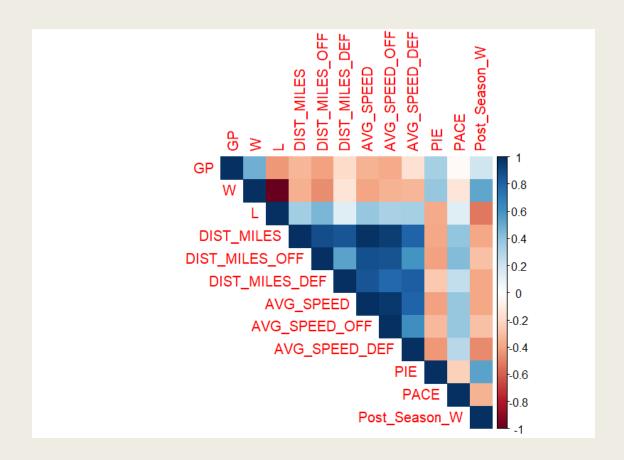
What does it mean?

- Wins vs PACE
- R=- 0.1073637
- low, negative correlation
- the higher the pace the less likely them winning a game is.



Correlation Map

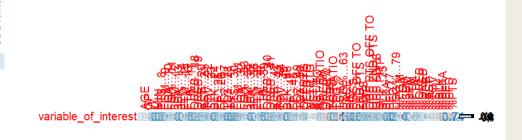
- WvsLis1
- Nothing above 0.5
- Post Season W vs L
- Post Season W vs Avg Speed Def



What we found

- Looking back at the data, PIE and PACE do not have a very strong correlation, showing that team's effectiveness does not rely on how fast they get up and down the court. But, since teams PIE and win ratio had a very strong correlation, we can conclude that player effectiveness does have an impact on the team's number of wins,
- We can assume that the teams with the highest wins have the most impactful players, lets look into players individual PIE vs every other statistic to prove that PIE only correlates with WINS

AGE
GP
W
L
L
MIN...7
OFFRTG...8
DEFRTG...9
NETRTG...11
ASTTO...12
AST RATIO...13
OREB%...16
TO RATIO...17
EFG%...18
TS%...19
USG%...20
PACE
PIE
POSS
MIN...24
OFFRTG...26
DEFRTG...26
NETRTG...26
NETRTG...27
AST.%...28
ASTTO...29
AST RATIO...31
DREB%...31
DREB%...32
REB%...33
TO RATIO...34
EFG%...35



Players Pie vs Everything else

- DEFRTG
 - Defensive rating
- TO RATIO
 - Turnover ratio

Conclusion

- PACE is not strongly correlated with wins
- PIE has a strong correlation with wins
- PACE and Average Speed is not strongly correlated
- PIE is not strongly correlated with any stat
 - TO Ratio and Defensive rating
- Basketball is very well rounded
 - A successful player in the current meta does not have a specialty on average, but is a jack of all trades

Retrospective

- Choosing the NBA statistics website was probably the best decision we had made as a team, since it was clean, and easy to navigate even though there were many rows and columns, and all we had to do from there was scrape the data into an excel sheet, convert it to a csv then use R-Studio to create our visuals.
- Team Coordination, Some communication problems but had eventually overcome them, and during out team meetings we had split up the data, everyone had done their part, but it got a little choppy when it came to putting everything back together.
- Questions answered, Looking back on it we didn't answer all of the questions simply because we didn't have the data to look at individual person's speed, but overall, we as a team feel that our data was represented very well and came to reasonable conclusions.

Work Cited

- NBA.com
- Basketballreference.com
- Espn.com
- Chatgpt.com
- Dataworld.com